

NOVEMBER
2015
ISSUE 640
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Alfa's M3

They hired Ferrari's finest. This is the story of their 191mph supersaloon

FIRST PICTURES

New BMW M2!

365bhp, rear-drive: meet M Division's beautiful baby

TECH

Fuel cells hit London!

+ We do new 7-series' back-seat fitness class

+ Tesla's Elon Musk: 'VW should lead on electric cars to restore faith'



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Mercedes F1's HQ

Toto Wolff shows us round the place where even Lewis needs a pass

WAR ON TESLA

Porsche goes electric

Why 2018's battery coupe is as radical as Bob Dylan pluggin' in

NEW VS USED

£18k MX-5 or used Lotus Elise 111S?



SPORTS CAR GIANT TEST 2015

STARRING:

FERRARI 488 GTB
MC LAREN 675LT
PORSCHE 911 GT3 RS
LAMBO AVENTOUR SV
CORVETTE Z06
PORSCHE CAYMAN GT4
MERCEDES-AMG GTS
LOTUS EVORA 400





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**2015's best sports car – the
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WELCOME.

Tesla moves the electric goalposts



Tesla has taken the electric car concept away from nerdy Johnny Cabs and into the realms of Porsche-baiting

foot on the brake, no engine noise or vibration, the only sound coming from the stereo. It's so undramatic – until the lights change.

Grip the thick-rimmed wheel firmly, mash the 'gas' pedal and, with a clonk, the best part of 713lb ft of torque instantly engulfs the rear axle. The Tesla surges forward, speed building in an incredible rush, the speedo's digits spinning like a Vegas slot machine. All the while you sit in a bubble of civility, with a whine of electric propulsion gently audible above the impressively smothered tyre and wind noise.

For me, silence is golden. We laud it in Rolls-Royces, A-listers seek it on private beaches, it's a coveted sensation. And that's the case in a Tesla – which also has the handy attribute of besting a 911 Turbo in the traffic lights grand prix. Of course, making an exceptional car

involves so much more than speed. The steering is nicely weighted and responsive, and while you notice the P90D's weight transfer and roll as you turn into corners, the nose obediently holds its line and the chassis relays that you can lay on the power. The ride is appropriately plush.

Driving a single-gear electric car does remove one of the key techniques of driving: swapping cogs accurately and smoothly. But with dual-clutch gearboxes reducing the level of effort and skill to the flip of a paddleshift, the transition from self-shifting to no-shifting is very much underway.

Yes, an electric car comes with compromises. But the Model S seeks to overcome range anxiety with around 250 miles from its 700kg battery pack, a fast charging network to facilitate

'grander' tours, and intelligent, connected navigation to monitor your position and advise the most efficient route, with charging stop-offs. It's a driving experience that will fascinate, and delight, every car enthusiast.

The point is that Tesla has proven the concept of an enthusiast's electric car – and Porsche is picking up the baton. Its beautiful Mission E concept, which we feature on p110, is three years away from delivering the first all-electric Porsche. It'll happen: executives are explicitly predicting 20,000 sales a year, and performance figures to match the P90D's. We photographed the Mission E alongside Audi's E-tron Quattro electric concept. The production version, along with Tesla's Model X crossover, will give electric drive the opportunity to take a foothold in the booming SUV segment.

Can anything stop the rise of electromobility? If anything, the sorry tale of Volkswagen's Dieselgate scandal should only hasten the flight to hybrid and pure electric cars. Because there's another overwhelmingly positive sensation when driving cars like the Model S: the knowledge that, at that moment of use, your 'ludicrous' 2.8sec 0-60mph sprint expels no emissions whatsoever.



Cover photography
Richard Pardon

HERE'S A NEW contender for your bucket list of cars to drive before you die – the Tesla Model S. An electric limousine, hampered by a 2200kg mass, shorn of a sports car's thunderous combustion and crackling tailpipes: how can it be so? Strap yourself into the flagship Model S P90D, complete with 'ludicrous' mode that warps from 0-60mph in 2.8sec, and you'll soon find out.

The P90D ticks the performance box in a rather demented way. There you are, sitting at a dual carriageway's red light,

▼ FROM THE ARCHIVE

car+

MIURA: THE LAST HURRAH



'I can still remember my horror at the Miura's relentlessness...120, 130, 140, 150 – good grief was it never going to end? Most of my guts were lying scattered in the luggage compartment.' That's how Doug Blain recounted his first taste of the Miura, in his November 1972 feature waving goodbye to Lambo's first V12 supercar. Part history, part flat-out blasts in various Miuras, this colourful and relentless piece is available to read in CAR+. Lambo Aventador SV in our Sports Car Giant Test – p74

ALSO ON CAR+...

Russell Bulgin's infamous 1991 Nigel Mansell interview; let's just say Mercedes F1's Toto Wolff was a touch less prickly in this month's interview

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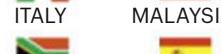
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FLIP A FEW pages further through this issue and you will find Georg Kacher's review of the newly enhanced Mercedes AMG A45. The very definition of the suddenly fecund mega-compact sector, this is a four-wheel drive, 376bhp, 2.0-litre turbo-four A-class, now upgraded with a front limited-slip diff and capable of 0-62mph in 4.2sec. It follows (very) hot on the heels of the second-generation Audi RS3 Sportback, another all-wheel-drive family-sized monster, this one with a 362bhp 2.5-litre turbo-five capable of propelling it 0-62mph in 4.3sec.

Confident statements of significant intent, both. But look closely and you'll see signs of nerves: a shivering door mirror here, a tiny unanticipated dribble of fluid there. And the reason is staring you in the face – this is the new BMW M2.

Having already slapped the competition around a bit with the M235i – a mere 'M Performance' version of the 2-series coupe – M Division has now decided to get serious. Like the limited production 1M Coupe before it, the M2 isn't so much a jumped up cooking compact as it is a pared down M3, making it something akin to an automotive gym junkie with an addiction to fat-shredding supplements. We're talking maximum muscle,

little frippery, rear-wheel drive – and the kind of personality that comes with a dangerous glint in its eye.

What does that mean? Not the full 425bhp M3 and M4 engine – imagine! – but a 365bhp M TwinPower turbocharged straight-six of similar 3.0-litre capacity, which BMW's head of M Division Frank van Meel describes as 'in between' those fitted to the M2's greater and lesser siblings: 'We pushed up the performance of the M235i engine, but that couldn't be done by just doing some software. So we changed the pistons, we changed the way the crankshaft is integrated into the engine, and we took parts from the M3 engine.'

For the record, the result is a 43bhp increase over the 322bhp M235i, while the quoted 343lb ft of torque is an 11lb ft improvement – still some way shy of the M3's 406lb ft. But this M3 face-saving Frankenstein vibe gives way to pure cloning with the wholesale deployment of big brother's gearboxes and chassis components. This propagates a choice of standard M-grade six-speed manual or optional seven-speed M-DCT twin-clutch automatic when it comes to swapping cogs, and a much, much wider set of wheelarches.

'The M235i is a success story. We sold 9000 units last year, which accounts for 30% of the overall volume. So we were not in a hurry to do any M2,' says van Meel. 'Especially if you look at comparison tests of M235i against its competition, there really wouldn't be a need. But we said, okay, we want to do one. So the differentiation to M235i, which is already a winner, must be really big. So more or less we've made a supercar out of the 2-series by putting the M3 chassis under the 2-series car.'

He isn't just talking about the M3's forged aluminium suspension components, which are lighter, stiffer and considerably broader than the standard 2-series kit – the M3/M4 has a 1579/1603mm front/rear track, the M235i 1521/1556mm; those arches aren't for show – but also the M Dynamic Mode driving setting and the Active M Differential. The former flips the car's personality from fast cruiser to serious bruiser, adjusting ▶

M2: BMW's 365bhp go-kart

Fabulous though the M235i is, it's not a true M car, in name or in intent. This, on the other hand, very much is; the thundering, 'kinky' M2. **By CJ Hubbard**



Bespoke engine, but M2's chassis and transmission are heavily M3/M4 inspired



Designers looked to the E30 M3 for inspiration, then presumably chose to ignore its boxy brilliance



Transmission options are a seven-speed twin clutch DCT or six-speed M-grade manual

the steering, the drivetrain and the M Adaptive suspension, while the latter combines the potency of a locking gear set with an electronic brain that uses your current driving data to decide whether the diff should be open, partially locked or 100% welded, delivering the optimum dynamic control in any particular set of circumstances. Maybe the M3 and M4 should be getting nervous, too.

'I don't think so,' chuckles Van Meel. 'Because M3 and M4 are a little bit more, uh, adult, and M2 is going to be really, I don't want to use the word kinky, but it's more a go-kart. And of course it still has the package of the 2-series. It's the entry drug for the M boys, but it's more like the 1-series M Coupe, and that also existed next to M3 at the time, and was just completely different – the character of this car is completely different too.'

It's also not quite as fast. Van Meel says the M2's target weight is sub-1500kg, which would be down from the M235i's 1530kg best (though M Division said the same thing about M3 and M4, and they ended up at 1572 and 1595kg) and go some way towards compensating for the power and torque deficit. But the M2 still needs a couple of tenths more to get to 62mph, taking 4.3sec with the M-DCT and 4.5sec with the manual. If you're thinking that's also behind the new AMG A45, and merely on par with the RS3, remember the M2 is relying on its rear wheels alone to put that

performance to the tarmac; we're dealing with a different kind of hardcore here. That word kinky comes up again, to the consternation of Van Meel's attendant press officer, but it resonates strongly. M2 is going to be a wild ride.

As for price, well, the M235i starts at just over £35k, the M4 just over £57k (the M3 ever so slightly less), so there's plenty of wriggle room in between – but since both of the M2's existing rivals just creep in at under £40k, we're expecting M Division to be equally aggressive with its power-per-pound ratio, and production won't be limited this time around.

Options will include an M Driver's Package, to increase the electronic spoil-

sport from the usual 250km/h (155mph) to 270km/h (168mph) – 'because there are a lot of cars on the German autobahn that can do 250,' says van Meel. M2 customers will want to leave them behind. This stuff matters.

Keeping costs under control, van Meel and BMW's recently appointed head of design Karim Habib confirm that the M2's distended bodywork isn't made of anything exotic, just the usual steel accessorised with aluminium. The look is new, though.

'I wouldn't say it's a departure, but it's a strong evolution for our M cars,' Habib postulates, referring specifically to the downturned 'winglet' elements in those side air intakes at the front, set to become a new M theme. Habib is also particularly taken with the way the shoulder line fades out above the tail lamps, emphasising the M2's muscularity. He cites the E30 M3 as a specific influence. We like Habib. 'I'm really happy with the way it turned out!' he says.

There are four colour choices: white, black, grey and the pictured Long Beach Blue. The wheels are lightweight 19s, with M Compound brakes lurking behind them, and you get a twin-exit sports exhaust. On the inside it's black leather with blue stitching, with a choice of regular sports seats or optional Recaros – the usual overly-chunky M steering wheel appearing as the only downer in the entire exercise thus far.

The proof will be in the driving, of course. But we have a hunch M2 won't disappoint. Asked how excited he is about this car, van Meel responds: 'I think the main point about this car is that M Division put all of its emotions into this vehicle. We do this always, but in the M2 it's driven to the top. It's a no-compromise car. Everything we could do, we did. Because we can.'

@ir_427



Designer Karim Habib (top) and M boss Frank van Meel. 'We've made a supercar out of the 2-series'

BMW M2: the rivals

'If you look at sales of AMG's A45, if you look at RS3, you see that in this market there is rapid growth' – Frank van Meel on why BMW is building the M2 now



MERCEDES-AMG A45

It's always been powerful, but AMG's improved the way the A45 drives as well as pumping power to 336bhp



AUDI RS3 SPORTBACK

362bhp RS3 wins the autobahn GP, with an optional 174mph limiter – the M2 and A45 are pegged at 168mph



VW GOLF R420

Mad 414bhp 2.0-litre turbo Golf is set to make production in 2016, assuming VW survives the #dieselgate fallout



FORD FOCUS RS

Like all M2 rivals the 345bhp Focus is awd not rwd, but 'drift mode' promises to make it steer from the rear



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THE DIESEL EMISSIONS scandal is pitting the people vs the People's Car-maker. Social media is buzzing with opinions on the Volkswagen brand's toxicity: who wouldn't be outraged by the contempt of VW engineers flouting laws designed to protect people's health, for commercial advantage? And the fallout is spreading beyond VW, putting the gutless European emissions test under the spotlight, and even bringing the diesel engine's future into question.

VW will pay an exorbitant price for its deception: manufacturing and installing software that ran two distinct diesel operating cycles, one for the laboratory to 'defeat' emissions tests, and one for the road. The on-road programme reduced the effectiveness of the exhaust emissions control system, increasing NOx pollution to 10-40 times the permissible US limit.

In the first few days of the crisis, €20 billion was wiped off VW's stock value. Then there's the cost of recalling and reprogramming 482,000 US cars, the cost of fighting class actions, and the fine: \$7.4bn worst case scenario, estimate analysts Bernstein. Plus the reputational

damage, caused by such a public shaming and inconveniencing consumers, who may find the driveability or economy of their reprogrammed cars suffer (though VW says it's striving to avoid this). It's a massive blow for Volkswagen, which was already struggling to meet its North American growth targets.

The shockwave hits Europe

The fallout has been brutal in Wolfsburg too: Martin Winterkorn, Volkswagen CEO for eight years, resigned within days of the scandal breaking. He's been replaced by Porsche CEO Matthias Müller. The company has also suspended an unspecified number of engineers, as it seeks to identify those responsible for criminal activities.

The defeat device affects 11m vehicles worldwide, more cars than Toyota recalled when it investigated unintended acceleration in 2010. Cars running the EA189 engine family of 2.0-, 1.6- and 1.2-litre TDIs (mostly last generation Golf, Passat and Tiguan) need a software upgrade; Audi, Seat and Skoda TDIs are also affected, as are some VW vans. In the UK, 1.2m vehicles will need remedial work. And what of the brand damage here? Here's one example: Glass's says diesel

Volkswagens' used values fell 0.2% in September, while rivals' climbed 2.8% – a 3% swing.

Dieselgate also calls into question the impotent NEDC European testing cycle, which dates back to the '70s. And as with the corruption charges against football's governing body FIFA, it has taken an American investigation to trigger action on a European failing.

Today's 6.8-mile test on a rolling road, which an insider described to CAR in 2013 as a 'fairly lame set of tooling about most drivers would struggle to replicate', is embarrassingly redundant. In America, independent agencies source cars from the production line and test them more exactingly on NOx: the US limit is 0.03g/km, for example, compared with 0.08g/km to meet the latest Euro-6 diesel standard.

And then there's the massive gap between

 **Events that rocked the car world**

Dieselgate

The scandal that triggered regime change at VW, shames European engine testing and threatens the compression ignition engine's very existence



the NEDC test figures and real-world fuel economy; lobby group Transport & Environment (T&E) claims this has widened to a staggering 40%. There's repeated anecdotal evidence that manufacturers are allowed to 'optimise' their pre-production test cars – improving tyre rolling resistance, using special lubricants, taping up shutlines, disconnecting the alternator – something disputed by UK trade body, the Society of Motor Manufacturers and Traders (SMMT). But the car makers do commission and pay for the tests: they are not independent.

'The European system of testing cars to measure fuel economy and CO₂ emissions is utterly discredited,' said Greg Archer of Transport & Environment. 'The Volkswagen scandal was just the tip of the iceberg; what lies beneath is widespread abuse of testing rules by car makers.'

GETTY IMAGES

'VW is the tip of the iceberg; beneath lies widespread abuse of testing rules by car makers'

Tougher EU testing – but when?

The EU and Japan are implementing a new WLTP test procedure. It'll last 30 minutes, more than a third longer than the NEDC test, and its acceleration levels, average speed and stop-start punctuations are claimed to be far more representative of on-road driving. Hybrids won't run fully-charged, which should rein in some of their preposterous, three-figure economy claims. Experts say up to 20% more fuel will be consumed than on the NEDC cycle; compliance for NO_x, particulate matter and carbon monoxide will continue to be tested. Lobbyists, some politicians and the SMMT are backing additional on-road tailpipe checks, the RDE test.

But when will the new WLTP test be implemented? Discussions started back in 2007,

with the UN adopting the procedure last year. But it's now being picked over in European Union technical discussions behind closed doors. Despite the SMMT publicly welcoming a 'new emissions test that is more representative of on-road conditions,' T&E alleges that member states with strong car industries – Germany, France, Italy and the UK – are trying to soften the target of 95g/km by 2021. A 10g/km leeway to take into account the new test's lower atmospheric temperatures, which will impact engine efficiency, will be included for starters. The wrangling means the test won't become EU law until 2017, the same year RDE is tipped for introduction.

Car makers have been complaining about the economic viability of engineering diesels to pass toughening regulations on NO_x. And they'll fear a shift away from diesel, which accounts for 50% of EU car sales. Its inherent efficiency advantage helps tackle global warming – and manufacturers meet their CO₂ obligations.

Even before Dieselgate, Parisian officials were criticising the fuel's local air quality impact, and London will financially penalise Euro-5 diesels wanting to enter its 2020 Ultra-Low Emission Zone. The SMMT continues to hit back against the demonisation of diesel, but VW's actions have brought the fuel into disrepute.

'With hydrocarbons, we hit the limit of physics several years ago,' says Elon Musk of electric car maker Tesla. 'Sitting in city traffic, your air intake is by the car in front's exhaust pipe: does that make any sense? I'm hopeful the result of this is to push the big car companies to accelerate their plans for zero-emission vehicles.'

Max Warburton of analysts Bernstein is more succinct. 'Does this signal the end for diesel?' he asks. 'Yes, it probably does.'

PHIL McNAMARA  @CARPhilMc

Martin Winterkorn (far left) resigned as VW CEO to be replaced by Porsche's Matthias Müller. Arguably neither of them got off lightly





In the moment

Pushing a Cobra way beyond its limits

Take a sopping wet Goodwood circuit, lob in former F1 pilot Giedo van der Garde in a Cobra, and stand well back

01

'Goodwood Revival is truly unique'

'Last year was my first visit. I had been to the Festival of Speed, which is cool, but the Revival is something else – an amazing weekend [search YouTube for 'Giedo Goodwood' to see him in action]. Lord March gets the most incredible collection of people together.'

02

'Goodwood is a very unforgiving circuit'

'It's a flat and very fast circuit, as you'd expect given its airfield origins. There is no room for even the slightest mistake; no high-friction run-off areas and no gravel traps. If you go off here, there's some lovely slippery green grass and then something hard and solid to stop you.'

03

'The Cobra is tricky, a real handful...'

'It just slides and slides. There's zero grip and no downforce... and that's in the dry. In the wet you have to wrestle it from one corner to another. There's understeer followed by snap oversteer, and that happens five or six times per corner. There's wheelspin at 140mph in fourth.'

04

'It's someone else's very expensive car'

'In the beginning you take care because you are driving an irreplaceable car. An F1 car can be replaced; not so these classics. You feel a weight of responsibility when you head out onto the circuit but then you get into the rhythm and all that stuff just disappears.'

05

'You can only learn so much car control'

'You can learn car control by driving lots of different cars, in different conditions, on different tracks, but you need to have talent inside you. You need to instinctively know what the car is going to do before it does it, and without panicking. You can't learn the last five percent.'

06

'I'm driving lots of different cars'

'I had that trouble with Sauber at the start of the year, which stopped me getting into anything full-time this season. But I've been testing, including DTM, WEC and Formula E. In the same week I drove the Cobra I also drove a GP2 car. Four wheels were all they had in common.'

NEW CAR DEBRIEF > MAZDA KOERU CONCEPT

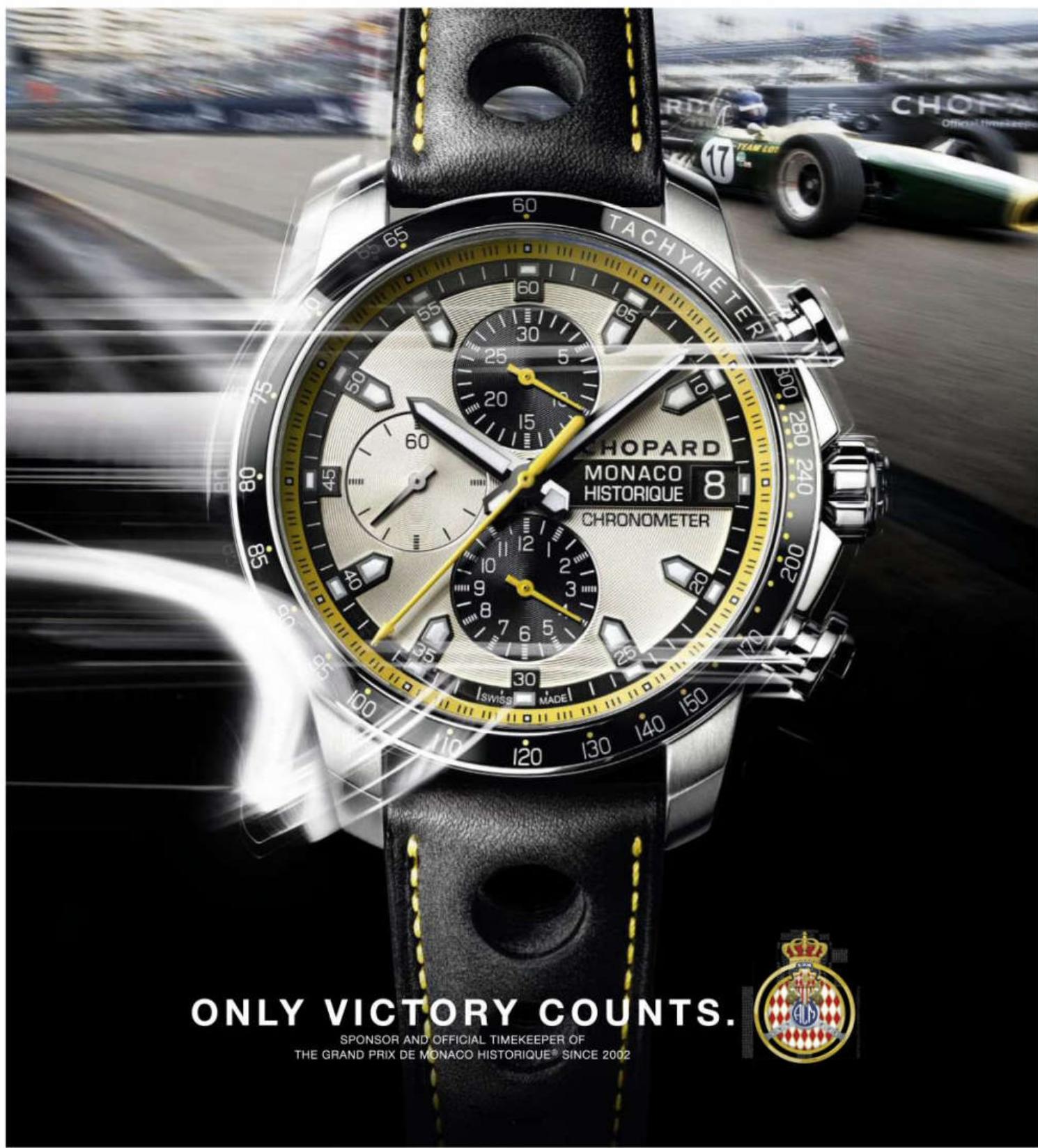
1 On a roll – following success with the CX-3 and CX-5, Mazda is clearly considering another crossover SUV. The Koeru concept points the way. Koeru means 'go beyond' in Japanese, and the sleek roofline suggests Mazda wants a piece of the BMW X4's action.

2 Close to production – is it really just a concept? Okay, so those 21in wheels are a bit much, but the surfacing is feasible and the interior looks fundamentally ready. No wonder spy shots of Koeru testing in China have started appearing already.

3 What's in a name? – Mazda is fond of fancy titles for its concepts but sticks to letters and numbers from the factory. So could the Koeru become the CX-4? Word is that it's based on the CX-5 platform, but 'CX-5 Coupe' doesn't fit the pattern.

4 Going beyond – engine line-up would likely mirror the CX-5's Skyactiv selection (148bhp diesel to 163bhp petrol in the UK); 2wd and 4wd, manual and auto are a safe bet. Expected to go on sale in China first, with global release in late 2016.





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Gamechangers. Literally

4 new Gran Turismo stunners

The Gran Turismo gaming franchise is now so influential car makers are queuing up to make fantasy supercars. Roll up Bugatti, Hyundai, SRT and Mazda. **By CJ Hubbard**



Bugatti Vision Gran Turismo

You'd think Bugatti had better things to do – polishing off the Veyron-succeeding Chiron, for example – but it reputedly spent six months putting this virtual racer together. It's billed as part tribute to the legions of Bugatti fans who couldn't afford one of the 450 Veyron production cars, part preview of the firm's future design direction. So actually,

maybe it isn't so fantastical after all. Certainly, Bugatti is at pains to point out that the engineering details are as realistic as possible – unlike some of the other entries on this page we could mention. But then, nor are they particularly radical, since the VGT reprises the W16 engine and sends power to all four wheels, just like the Veyron. Still, Chiron? Soon. Please.

NEED TO KNOW

> **Powertrain** W16 of unspecified size and output, 4wd > **Performance** Claimed to exceed 250mph four times around Gran Turismo's virtual Le Mans circuit > **Design highlights** Digital instruments in the steering wheel, Chiron-previewing front end?



SRT Tomahawk X Vision Gran Turismo

SRT, in case you need a reminder, is the Dodge performance brand that now takes responsibility for the Viper – which explains the Tomahawk's V10 engine. Everything after that is pure energy-drink-overdosed all-night gaming session-induced madness. Somebody really let these guys off the chain, because not only is the V10 a near-flat 144-degree design,

its maximum 2000bhp output is boosted by a pair of pneumatic energy storage devices laminated into the carbon nanofibre and graphene micro-lattice structure. Then there's the active chassis and aero, controlled by a road-scanning laser and so extreme the virtual pilot has to wear a G-suit. It's giving us the caffeine jitters just thinking about it.

NEED TO KNOW

> **Powertrain** 2500bhp+ via 6.98-litre V10 and twin pneumatic boosters, 4wd > **Performance** 422mph, thus demanding a seven-month virtual training programme > **Design highlights** Active aero, active suspension, active camber, single seat

Hyundai N 2025 Vision Gran Turismo

Cunning conceptual double play, this. On the one hand the 'N 2025 Vision Gran Turismo' helps publicise Hyundai's new N (for the Namyang R&D centre and the Nürburgring) performance brand; on the other it highlights the company's fuel-cell activities, as the imagineers have loosely based the powertrain on the hydrogen tech from the production

ix35 FCEV. Emphasis on 'loosely', though, as the N 2025's dual fuel-cell stacks generate a virtual 650kW – equivalent to 872bhp – topping that up with a 150kW (201bhp) capacitor, charged via energy recuperation. In-wheel electric motors put the power to the PlayStation, while digital carbonfibre means it would weigh just 972kg. If it was real, that is...

NEED TO KNOW

> **Powertrain** 1073bhp via dual hydrogen fuel-cell stacks and capacitor, 4wd via independent in-wheel electric motors > **Performance** 1104bhp per tonne > **Design highlights** low centre of gravity, air brakes, 200,000rpm aero-enhancing turbine



Mazda LM55 Vision Gran Turismo

Dear Mazda, if you're going to take the time to make up a highly futuristic hypercar, could you at least make up some technical data as well? While we commend citing the 1991 Le Mans-winning 787b as muse – and what would appear to be the digital appropriation of its rotary engine note – even the in-game spec panels are blank when it comes

to power output, engine type and other performance parameters. Fortunately, people with more time than us have taken it to the virtual max (thanks YouTube), so we know it can do 290mph in a (very long) straightline. Possibly nobody else cares. Probably all that matters is that it looks pretty, goes fast, and plugs Mazda's holistic Skyactiv philosophy.

NEED TO KNOW

> **Powertrain** Sounds like a digital derivative of the 787b's quad-rotor to us, 4wd > **Performance** 290mph, so beyond 787b's reputed 700bhp...? > **Design highlights** Appearing 40m in the air on the 2015 Goodwood central sculpture. Too literal?





35 AWARDS NEED WE SAY MORE?



CITROËN C4 CACTUS

There's probably no need for us to waffle on about all the wonderful award-winning features, so here's a little wordsearch...

Discover more at citroen.co.uk

AIRBUMPS
EFFICIENT
ENGINE
PANORAMIC
ROOF
THERMODYNAMIC
TOUCHSCREEN

A	F	R	P	A	N	O	R	A	M	I	C	Q
F	G	H	E	R	E	F	T	G	Y	J	I	L
L	A	W	S	D	E	N	E	A	L	C	X	N
I	M	F	A	I	R	B	U	M	P	S	L	L
O	S	X	G	T	C	H	U	M	K	O	E	B
I	I	S	E	A	S	F	Y	Q	A	D	F	B
R	T	Y	R	I	H	K	A	R	O	O	F	S
I	E	L	D	G	C	V	T	Q	G	I	H	
X	U	P	Z	U	I	R	L	D	Y	C	I	
T	H	E	R	M	O	D	Y	N	A	M	I	C
F	E	K	M	V	T	A	H	I	L	A	E	
G	R	L	I	I	C	I	E	N	G	N	E	
A	D	G	X	X	L	Q	U	O	S	N	T	C

CRÉATIVE TECHNOLOGIE

citroen.co.uk

CITROËN prefers TOTAL. Model shown: C4 Cactus PureTech 82 manual Flair. OTR price £16,490 (incl. Polar White paint and Chocolate Airbump® at extra cost of £250 and £150 respectively).

Official Government Fuel Consumption Figures (litres per 100km/mpg) and CO₂ Emissions (g/km) (Range). Highest: Citroën C4 Cactus PureTech 110 S&S manual: Urban 5.8/48.7, Extra Urban 4.0/70.6, Combined 4.7/60.1, 107 CO₂. Lowest: Citroën C4 Cactus BlueHDi 100 S&S manual with 15 inch wheels: Urban 3.5/80.7, Extra Urban 3.0/94.2, Combined 3.1/91.1, 82 CO₂. MPG figures are achieved under official EU test conditions, intended as a guide for comparative purposes only, and may not reflect actual on-the-road driving conditions.

'There aren't many niches left. A Project i SUV? That's interesting...'

BMW is now a purveyor of MPVs, 4x4s and EVs, as well as reps' 3-series and sports cars. Whither the enthusiast's core? Over to you, sales chief **Ian Robertson**

MEET THE MAN whose job it is to sell BMWs in all shapes and sizes – Ian Robertson, the company's global sales and marketing hotshot in Munich. And those shapes and sizes have become increasingly diverse in recent years, as Beemers have been twisted into swollen crossover forms, forced to play Golf and distorted into that last bastion of fecund family chariots: the mumsy MPV. How can the man sleep at night, facing the bitter opprobrium of enthusiast chatrooms around the world?

Robertson brushes aside such criticism. He's proud of the transformation underway at BMW and provides hard evidence to prove the expansion is working. The group flogged a record 1.1 million cars in the first half of this year – underlining the futility of complaining about front-wheel drive BMWs and the genetic modification wrought upon the kidney grille's sporting DNA. It's hard to argue with €5 billion of pre-tax profit in just six months, after all.

'We're selling 10,000 front-wheel-drive cars a month,' he counters, 'and we're seeing 70-80% conquest sales – so these are people who are new to the BMW brand. Trust me, it's good business.'

But will BMW continue to shock and surprise us with distinctly unsporting mainstream fare? 'The chequerboard of segments and bodystyles is a little full,' admits Robertson. 'There are still some blank spaces, but not many. The rate of change we've seen in the past decade is unlikely to continue.'

In an age when even Volkswagen is trimming its model line-up, could BMW be forced to row back from less popular segments? 'I wouldn't rule that out. There's no plan at the moment, but some segments are tough. The roadster isn't really recovering – it started to go down in 2008 and it's now actually even lower. If we can't find ways of bridging the gap



CAR'S CURVEBALLS

6 questions only we would ask...

Tells us about your first car...

'It was a 1965 Singer Chamois registration KPT 68C – I bought it for £80 and rebuilt it from the ground up when I was 17. I sold it eight months later for £190!'

Which achievement makes you proud?

'I've had numerous high points – and challenging times too. When I was CEO of BMW South Africa we started the company's first export programme to supply cars to North

America. And playing a part in the resurgence of Rolls-Royce, at a price point higher than any predecessor or rival, was special.'

What's the best thing you've done in a car?

'One of the best experiences of recent times is doing the Mille Miglia. It's a country which has a long history of the event and a deep love of the car. I've done it four times in a 1938 Berlin-Rome roadster. It's brilliant but totally exhausting...'

Tell us how you

screwed up...

'You can always look back and say we could have done something better. One of the great things about BMW is that it moves so quickly. As a company we are never really satisfied with what we have achieved. We tend to move quickly over the successes and challenge ourselves to ask what we could have done better. We don't want to reflect on our successes for too long. That's at the heart of our energy moving forwards: we're always hungry for more.'

Supercar or classic?

'Both. The two can go

together, I believe. I've been looking around for a 3.0 CSL – I want to acquire one this year. There are only 500 right-hand drive ones in the world, but a nice one is on my radar...'

Company curveball...
what did the Queen say to you when you went to Buckingham Palace to receive your gong? [Robertson was awarded the Companion of the Order of St Michael and St George]?

'That's private! But she was very well briefed when we had a two-minute conversation. She was quite charming.'



ILLUSTRATION: MATT HENRY HODGSON

↑
The bookends of the BMW range, from i8 to front-wheel drive 2-series MPVs. Global sales chief Ian Robertson is adamant the one cannot exist without the other

palpably sense the internal tug-of-war between the professional pragmatist and personal petrolhead in such conversations. The steady flow of go-faster M division products and the sci-fi fast-future i8 prove that BMW still has the appetite to deliver a thrilling sports car, yet there's the nagging fear that commercial realities have diluted the essence of the brand.

A special birthday looming on 7 March 2016 could go some way to redressing the balance. It's BMW's centenary. 'There will be some reflection on the milestones of the last 100 years but we will be very clear on where we see things going in the future,' says Robertson. Will we see any mega concept cars to mark the centenary? 'There will be a little bit of that. You will see some products that are exciting, yes.'

An electric SUV to give the Project i a new lease of muddy life? 'That's an interesting question,' he smiles. BMW minibuses or commercial vehicles? Nope, nothing so radical. But he does commit to yet more 4x4s – from the X7 coming in 2016, topping Munich's mushrooming SUV family, to the newly supersized Mini Clubman and Rolls-Royce coming later this decade.

Even if the Chinese car market is cooling, the SUV remains at the heart of BMW's future. Seems shape-shifting is here to stay.
TIM POLLARD @TimPollardCars



2-series Active Tourer: if you're going to do a mumsy MPV, make it the ultimate mumsy MPV

for the investment required, then that's a tough segment.'

A BMW range without a sports car sounds like anathema to us, but they're an inventive bunch in Munich and the new trick to achieve the impossible is to collaborate. Witness last month's exposé in CAR, where we revealed the secret BMW supercar which could be built in association with McLaren of England. Robertson laughs off our scoop when we plonk the magazine on the table and claims 'he is not aware of this plan,' as his PR minders splutter into their mineral water. But he is prepared to go on record about the new sports car being scamped out with Toyota.

'The sports car project is progressing,' he tells us. 'The roadster segment is still challenging around the world so we haven't pressed the button on development yet. We have a couple of designs that we have said, "yes, these are separate enough for two brands." Our engineers have agreed on the hard points. We are waiting for the right timing – so it is still a few years away yet.'

Like many senior execs in the motor industry, Robertson really is car-mad (witness the hunt to buy his own 3.0 CSL, see CAR's Curveballs, left) and you can

Connect 4

VOLKSWAGEN SUVS

There's a new Tiguan in town (if not in the country). The best VW 4x4 yet? You be the judge...



The people's posh crossover

Tiguan Mk2

Second-gen Tiguan becomes the first VW Group SUV to use the MQB platform, resulting in a 50kg weight reduction, a 24% increase in claimed efficiency, and a much bigger boot (up 145 litres to 615 without folding the seats). It even looks less anonymous. Though that's hardly saying much.



The people's Porsche Cayenne

Touareg (Mk1 2002-2010)

VW's first proper SUV is best known for being the non-identical twin of the Porsche Cayenne, and offering an improbable 5.0 V10 TDI engine option. With up to 345bhp and 627lb ft, it could – and once did – tow a Boeing 747 jumbo jet.



The people's Audi Allroad

Golf Country (1989-1991)

Think the trend for jacked-up family cars is new? Back in 1989, VW showed an off-road Golf concept called the Montana. In 1990 it turned to Steyr to put it into production as the Country, adding 438 parts to the existing 4wd Golf Syncro.



The people's armoured car

Type 183 'Iltis' (1978-1988)

We could go back to the VW Kommandeurwagen, a 4wd Beetle from 1941, but the Iltis (Polecat) is a bit more contemporary, being a boxy off-roader built for the military. It also donated its 4wd system to the original Audi Quattro. A legend, then.

AT THE PRECISE moment his current Lotus F1 team passes back into the hands of his Renault countrymen, French driver Romain Grosjean has jumped ship and signed for the new Haas F1 Team in 2016. His signature is undoubtedly a coup for the American outfit, but why should Grosjean – a 10-time podium finisher and one of the sport's pre-eminent drivers – have opted for a rookie team?

The answer lies in the car's power unit. Haas have struck up a technical partnership with Ferrari that will see them buy the entire rear end of their car – the engine, ERS and gearbox – from the Scuderia, including suspension parts and brake ducts. By committing to Haas, Grosjean has aligned himself with the Scuderia, and that's significant because the team will most likely have a seat available at the end of 2016, when Kimi Räikkönen retires from F1.

'I have five or six seasons left in F1,' said 29-year-old Grosjean at the Haas launch. 'This option with Haas could open other opportunities for me.'

There's speculation that a pre-contract with Ferrari is part of Grosjean's deal with Haas; what we know for sure is that Ferrari will get the chance to analyse all of Grosjean's telemetry during 2016. They will be able to see how he generates his speed and how he develops the car, and all the while Grosjean will get to use the Scuderia's simulator and ingratiate himself with the top brass at Maranello.

But Grosjean still needs a good car. If Haas are too slow next season, his star will wane and Ferrari will be tempted to look elsewhere for a Räikkönen replacement. The team has a history of only hiring established stars and there will be plenty around at the end of next year, such as Daniel Ricciardo, Valtteri Bottas and Max Verstappen (who will still only be 19!).

But the Ferrari link should guarantee Haas a mid-grid position. They will get the mechanical side of their car from Maranello, leaving Haas to build the chassis and to sculpt the bodywork around it. To that effect, they have hired Ben Agathangelou as chief aerodynamicist; he's ex-Ferrari and well respected in the industry.

MOTORSPORT

Grosjean grabs keys to Ferrari's back door

Hidden truth behind Frenchman's strange decision to join American F1 rookies in 2016. **By Tom Clarkson**

America and F1: not star-spangled!

AMERICAN TEAMS

haven't enjoyed much success in F1. Many have tried their hand at the top echelon, only to fail, and just two teams have succeeded in winning races. Eagle won the 1967 Belgian GP with Dan Gurney behind the wheel and John Watson took the spoils for Penske at the '76 Austrian GP.

The US-European

business model being pursued by Haas isn't new. In 2010 the US F1 Team planned to base itself at Charlotte, North Carolina, and have a logistics hub in Europe. But the team never got off the ground and Haas is the first American team on the grid since Carl Haas (no relation) founded the unsuccessful Lola-Haas team in 1985.

TEAM ANGLO AMERICAN RACERS

Car Eagle T1G
Key drivers Dan Gurney, Richie Ginther
Raced 1966-68 (32 races)
Wins 1 **Points** 17

TEAM PENSKE

Car PC1-4 Ford



Cosworth (below)

Key drivers John Watson, Mark Donohue
Raced 1974-77 (54 races)
Wins 1 **Points** 22

TEAM HAAS

Car Lola Hart THL1
Key drivers Alan Jones, Patrick Tambay
Raced 1985-86 (32 races)
Wins 0 **Points** 6



Billionaire machine tools magnate Gene Haas (top) has appointed Italian Günther Steiner as team principal of F1's first American race team for 30 years

Haas will have a staff of 200, which is small by F1 standards. But the team is producing less of the car than any other team on the grid and don't mistake a small workforce for a lack of financial commitment from owner Gene Haas. The machine tools magnate is worth nearly \$1 billion, and he has very clear marketing reasons to enter F1.

'There is a synergy between F1 and selling machine tools,' he says. 'I don't see myself as any different to Red Bull or Nike.'

Personnel will be split between Haas's HQ in Kannapolis, North Carolina, and a European logistics hub in Banbury, in what used to be the Marussia factory. Overseeing day-to-day operations will be team principal Günther Steiner, formerly MD of Jaguar Racing and technical director at Red Bull Racing, who will report into Haas.

The switch from Lotus to Haas is a risk for Grosjean, but what it tells us above all else is how much he really wants to race for Ferrari in F1.

• @TomClarksonF1





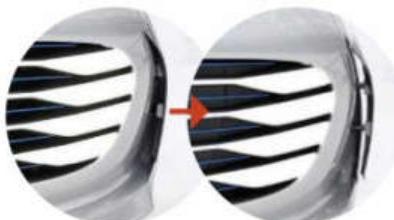
Merc's dreamy streamliner

Shape-shifting Concept IAA takes active aero to the next level. **By Ben Barry**

THE MERCEDES-BENZ Concept IAA was one of the stars of the Frankfurt show. Standing for Intelligent Aerodynamic Automobile, the concept's sleek bodywork echoes the streamlined W125 driven to an autobahn-storming 268mph by Rudolf Caracciola in 1938. Radical active aerodynamics – bodywork that extends by 390mm at speed, shape-shifting wheels – combine with a plug-in powertrain for efficiency that'd have VW execs desperately plugging their laptops into onboard diagnostics.

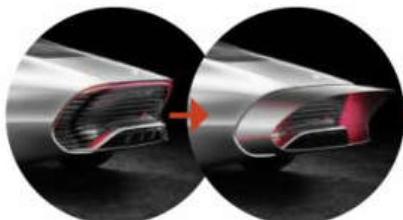
The result is a car that improves from an already slick 0.25Cd to an incredible 0.19Cd with all aero tricks deployed, and emits a claimed 28g/km CO₂.

Mercedes' aerodynamics expert Martin Konermann explains how it all works.



1 Wind-cheating front vents

Flaps behind the front grille close when cooling requirements reduce at speed, and the splitter also retracts by 60mm to increase under-body airflow. Either side of the front bumper, active gills help quell turbulence around the front wheelarches.



2 The extending derriere

Looking like a robot armadillo, the IAA's rear electro-mechanically extends by 390mm above 50mph. The eight-piece arse is made from carbonfibre; strong enough to withstand the airflow, so light that the driver perceives no shift in weight distribution.



3 Clever colanders

At low speeds the 22-inch wheels – with slim 235-section tyres – are dished to a depth of 55mm, and feature an opening around their perimeter for brake cooling. The dish shrinks as centrifugal forces build; at 50mph it's flat, and the cooling slot sealed shut.

Has boot space been compromised?
Possibly

4 Petrol/electric fuel-sipper

A plug-in petrol/electric drivetrain powers Concept IAA. Lifted from the existing C350e production car, the 2.0-litre turbocharged four-cylinder engine produces 208bhp, or 279bhp in tandem with the electric motor. Mercedes quotes an all-electric range of 40 miles, and 28g/km CO₂ on the combined cycle with all the aero toys active. But because the IAA Concept cruises through half of the EU combined cycle on electric power alone, the aero represents only a 3g/km saving under lab conditions. Aero expert Martin Konermann, however, claims a 20g/km CO₂ real-world reduction at 87mph.



5 E-class interior preview

The IAA's cockpit hints at what 'the interior of a business saloon might look like in the near future' – cunning code for 'it's the next E-class'. The four-seat cabin evolves today's S-class approach, and features contrasting anthracite and white leather trim, aluminium and cut glass, and iPad-esque instruments. The steering wheel includes touch-based Optical Finger Navigation; imagine an iPod wheel and adjacent back button. Connected tech allows the IAA to avoid accidents by communicating with other cars.

RC213V-S superbike is a road-legal version of Honda's MotoGP bike. A snip at £148k. Might need a cheaper motor for production 2&4?



2&4 CONCEPT

Honda: let's make a bike... No! A car... No! etc

Soichiro Honda once built a jet pack. So this verges on the normal

WE'VE A SNEAKING suspicion that someone important at Honda has seen the Ariel Atom and thought: 'How cute! Let's do that properly.' Meet Project 2&4, the winning entry in an internal design competition intended to show off the company's combined car and motorbike expertise – and an utterly uncompromising flyweight performance car, powered by the engine from a £148,000 superbike.

Honda bike designer Martin Petersson is the man responsible. 'The brief was quite simple: you have to use the V4 RCV engine, and you have to have four wheels. That's it. Growing from that engine I started thinking of this layout, and together with the car [design] side tried to find a unique, exciting package. This came out.'

'This' is mid-engined, rear-wheel-drive minimalism taken to the extreme. Based around an aluminium central backbone, it weighs just 405kg and is powered by a race-spec (though road legal) 1000cc four-stroke that makes 212bhp, revs to 14,000rpm and breathes through a pair of titanium exhausts. It rides on Öhlins adjustable bike dampers and uses bike brakes, but a DCT 'box and

a car differential. The only protection for the driver comes from a wind deflector that doubles as the instrument cluster.

'It's basically your butt, a little bit of padding, some carbonfibre and then the ground,' says Petersson, who is especially pleased with the seat. 'It has an opening in the lower back area so you get all of the vibration and heat from the exhaust!' Roasting your arse is apparently part of the authentic motorbike experience he was aiming for. More impressive is how simple it is to add a second seat on the other side (remove fairing, bolt on to pre-existing mounting points); drive-by-wire controls make rhd conversion a doddle.

It's so beautifully resolved you begin to wonder if Honda might actually build it. 'This kind of backbone frame, we do it on the bikes all the time. Okay, so it's a bigger scale, but it's not madness,' Petersson smiles. 'Should I answer with the company slogan, The Power of Dreams? These things, they start somewhere. I mean, we make *!x*ing jet airplanes!'

CJ HUBBARD @ir_427



Is designer Petersson happy with his work? 'I'd like to simplify a few things. Proportion wise and concept wise, I think it's great! Sorry, I shouldn't say that about my own stuff – what a jerk!'

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OR a Mercedes C63 AMG OR a VW Tiguan

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Tiguan, C63 and R8: any room on your driveway?

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 **WATCHES**

Licensed to make Bond's watches

Saving the world on a tight timeframe? Be sure to make like Craig and put an Omega on your wrist

THE WORLD IS going *Spectre*-crazy and CAR's watch column offers no resistance, particularly as James Bond's watches are almost as integral to his identity as his cars. Fleming gave his hero a 'heavy Rolex Oyster Perpetual on a metal bracelet,' but for the last twenty years Omega has provided his wristwear. It pays for the privilege, but as a supplier to the British military since the Second World War and the maker of some of the world's best diving watches, it's the brand a Royal Navy Commander would actually wear.

BEN OLIVER  @thebenoliver



Omega Seamaster Aqua Terra 150M Limited Edition

£4630

Subtle James Bond branding – one for the fans

This watch doesn't appear in the film and is offered in a barely limited run of 15,007 pieces. The Aqua Terra design is slimmer than Omega's other diving watches, and the Bond branding on this one is limited to a subtle dial pattern based on his coat of arms, and a very precise anti-magnetic rating of 15,007 gauss. The crystal caseback reveals an oscillating weight cut to look like the gun barrel from the film's opening credits, and it winds a super-precise co-axial movement.

Omega Seamaster 300 Spectre Limited Edition

£4785

Retro look for Bond's actual watch

This is the watch that Daniel Craig wears in *Spectre*, and it is being offered in a not-very limited edition run of 7007 pieces. Its styling echoes Omega's legendary divers' watches of the '50s and '60s, down to the 'aged' dial and hands. The front is pleasingly free of any Bond references, but the caseback carries the Spectre logo. The fabric NATO strap is the same pattern as the one worn (with a Rolex) by Sean Connery in *Dr. No*.

www.omega.ch



Omega Seamaster Professional 2531.80

£1800

Bond's first Omega, and now a true classic

Pierce Brosnan wore this classic blue-dialled Seamaster for his four outings as Bond. He started with the quartz version in *GoldenEye* in 1995, but the automatic version used in the next three films is more collectible. Good-looking, tough and wearable, it now sells for around twice its asking price when new and is unlikely to lose you money. Buy from a reliable source such as Watchfinder (watchfinder.co.uk), and look for one with its original box and papers, and a recent service.



NEW CAR DEBRIEF > TESLA MODEL X

1 All-electric SUV – this is the four-wheel-drive Model X, the latest bombshell from Californian electric maverick Tesla. Naturally it does without a filthy combustion engine; power – lots of it in 752bhp P90D guise – comes from two electric motors, fed by a battery with a 250-mile range.

2 Tesla gives you wings – double-hinged 'falcon wing' rear doors promise easy access in tight spaces, as do auto-opening front doors. Interior space is vast – choose six or seven seats over three rows – and will feel bigger still, with a minimalist Tesla cabin architecture and a windscreen extended overhead.

3 Ludicrous speed – 510bhp 90D is no slouch (0-60mph in 4.8sec, the standing quarter-mile in 12.2sec and 155mph) but P90D promises surreal 752bhp performance; 0-60mph in 3.2sec and the quarter-mile in 11.7sec if you opt for the Ludicrous speed upgrade. This despite the Model X's 2468kg kerb weight.

4 Smart and safe – a low centre of gravity, engine-free crumple zones and collision avoidance tech have prompted Tesla to claim the Model X safer than Audi Q5 or Volvo XC60. Order now for a UK delivery in mid to late 2016. UK prices are unconfirmed, but reckon on £74k for the 90D.



THE NEW FORD C-MAX



An intelligent and stylish car packed full
of technology with room for all the family.
And Teddy too.
ford.co.uk/NewC-MAX

Official fuel consumption figures in mpg (l/100km) for the New Ford C-MAX range: urban 33.6-60.1 (8.4-4.7),
extra urban 54.3-76.4 (5.2-3.7), combined 44.1-68.9 (6.4-4.1). Official CO₂ emissions 149-105g/km.

The mpg figures quoted are sourced from official EU-regulated test results (EU Directive and Regulation 692/2008), are provided for
comparability purposes and may not reflect your actual driving experience. Model shown differs from UK specifications.



Go Further

TECH.

The innovations transforming our driving world

Hydrogen fuel-cells: time for take off?

Toyota and Hyundai are launching the UK's first fuel-cells. This is a big deal, something which can't yet be said of the refuelling network

HYDROGEN-FUELLED cars have been years away from production for years. But could these zero-emissions electric vehicles – fuelled by earth's most abundant element, emitting nothing but water from their exhausts – finally be on the cusp of a long-overdue breakthrough? With the hydrogen fuel-cell Toyota Mirai and Hyundai ix35 now available in the UK, and the government pledging £6.6 million for refuelling stations, the latest developments are positive.

Toyota chief engineer Yoshikazu Tanaka is cautiously optimistic. 'We've been studying fuel-cells since 1992, and there are many advantages: it takes a similar time to petrol to refuel, hydrogen has seven times the power of a lithium-ion battery in battery-electric vehicles, with zero emissions and a long driving range.'

But limited refuelling stations makes leasing a fuel-cell a leap of faith – the Mirai family saloon is priced around £60,000, the ix35 crossover £53,105 – with low volumes and sky-high development costs to blame. 'The Mirai has 370 individual fuel-cells with a thickness of 1.34mm arranged in a fuel-cell stack,' explains Tanaka-san. 'The stack is compact, high power and highly efficient, but its complexity presents a challenge to make the thousands of units required for the Mirai, let alone truly mass-produced volumes.'

Streamlining production and adding body-styles like SUVs will boost the economies of scale, and Toyota and BMW are collaborating to generate further synergies. BMW powertrain engineer Matthias Klietz – the man behind a 5-series GT fuel-cell concept – explains the logic: 'Our objective is to accelerate development, share expertise and cut costs; fuel-cells will eventually be cheaper than battery-electric cars.'

Toyota foresees a mixed portfolio: BEVs to

provide 'personal mobility' in cities, with hydrogen fuel-cells best suited to larger cars and longer trips; the Mirai has a range of over 400 miles, far greater than the 100-or-so miles typical of most BEVs. Hybrids and plug-ins cover the middleground with fossil-fuel comfort blankets.

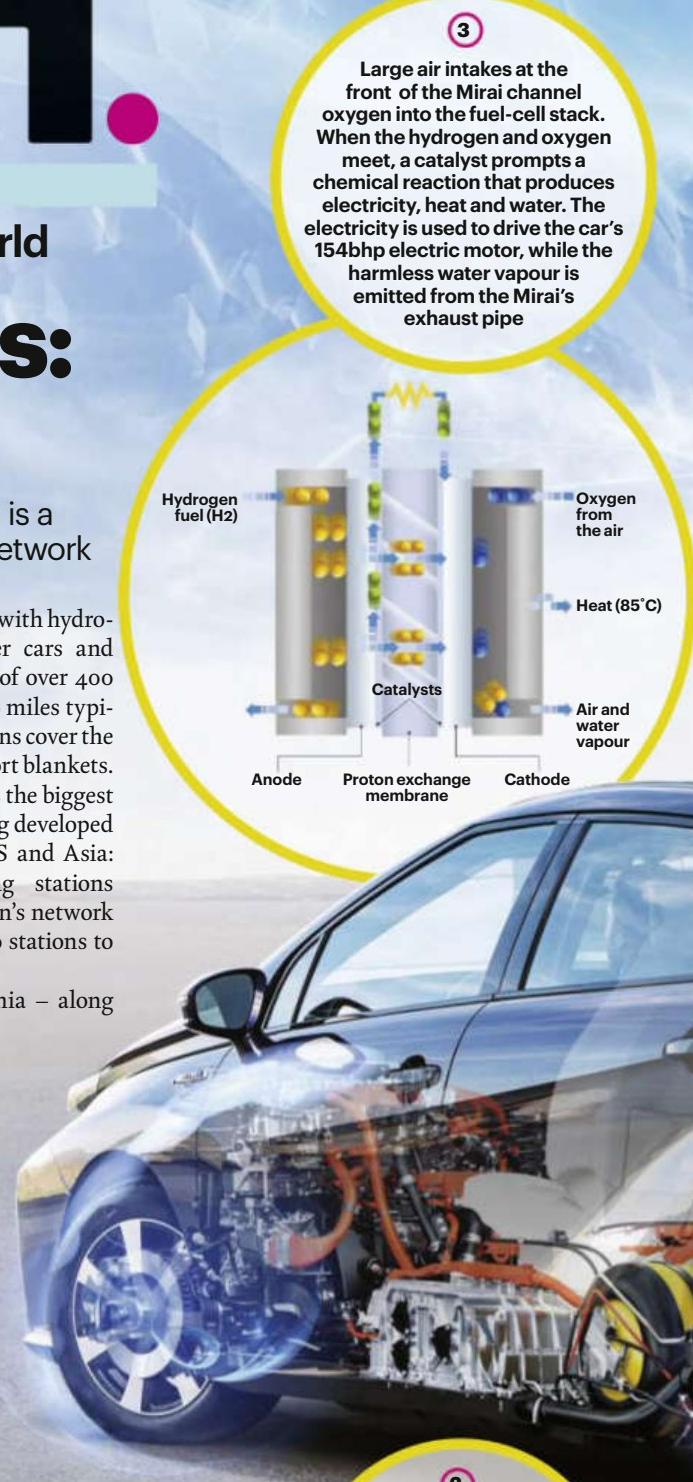
Refuelling infrastructure remains the biggest hurdle. Hydrogen corridors are being developed and planned across Europe, the US and Asia: Germany's 50 existing refuelling stations should balloon to 400 by 2023; Japan's network is planned to grow from today's 100 stations to 800 in 2025.

But even early-adopting California – along with Japan, the only other market to offer Honda's FCX fuel-cell trial in 2007 – has only 10 stations. The UK government's cash pledge will create just seven new stations, for a total of 12 nationwide; there are more than 8000 petrol stations.

'Even though the tech is there, you need co-operation between governments, car companies and fuel companies,' says Tanaka. 'In future, car companies may play a larger role; it's moving that way in Japan.'

Toyota plans to increase production of the Mirai from 700 units in 2015 to 3000 by 2017, and Tanaka tentatively hopes to see a ten-fold increase to 7000 units by 2020. By then, partner BMW is aiming to have 'production-ready components'. The ball might be rolling slowly, but it's gathering momentum nonetheless.

BEN BARRY  @lamBenBarry



3
Large air intakes at the front of the Mirai channel oxygen into the fuel-cell stack. When the hydrogen and oxygen meet, a catalyst prompts a chemical reaction that produces electricity, heat and water. The electricity is used to drive the car's 154bhp electric motor, while the harmless water vapour is emitted from the Mirai's exhaust pipe

2
Hydrogen is stored in those yellow fuel tanks at 700 bar. Made of light carbonfibre, an inner layer of polyamide resin resists hydrogen permeation. Gas is sent forward to the fuel-cell stack



Download lowdown

The monthly test bench for in-car apps



QUOTEMEHAPPY.COM
£Free/Apple/Android

What is it? Logs accident details for insurance claims

How it works: Pinpoints your location, gives a step-by-step guide to logging details and damage in words and pics, suggests quick links to contacts

Cool feature: You don't have to be insured with Quotemehappy.com, but it helps

Usability: Good app scuppered by repeated freezes at 'name this claim' stage on iPhone, with no clear way to report the glitch

Rating: 3/10



BLA BLA CAR
£Free/Apple/Android

What is it? Car-sharing app

How it works: Input your route and either offer seats in your car, or book a passenger ride, paying in advance

Cool feature: Driver profiles show experience; previous passengers comment on the drive; get driver's phone number on booking

Usability: Best for city dwellers but well thought out; be sure to lock down pick-up and drop-off

Rating: 7/10



SHELL MOTORIST
£Free/Apple/Android

What is it? Pay-for-fuel app

How it works: Register, get PayPal account, scan QR code at pump (from inside your car; be warned not all pumps have said code), fill car, job done

Cool feature: Get receipts and loyalty points, all via the app

Usability: Struggled at three fuel stations, failing to load or telling us to pay inside. Nice idea but reliant on connectivity

Rating: 3/10



MOTORWAY WALKS & BREAKS
£Free/Apple/Android

What is it? 30-45-minute dog-friendly walks within five miles of m-way junctions

How it works: Choose your motorway, see the recommended walks. Free version pared back, but for £2 the list is hugely expanded

Cool feature: Check out pics of the walk

Usability: Easy functionality, clear directions and sat-nav inputs, detailed descriptions.

Rating: 6/10

Does it work?

The backseat gym



FROM REMOTE PARKING to gesture control, the sixth-generation 7-series is almost alive with cutting-edge tech, as befits its status as Munich's flagship. But is it clever enough to deliver a rippling, muscle-bound torso using nothing more than its back seats?

That – with only mild exaggeration – is the promise. Tick the boxes marked rear-seat massage function (£895) and rear-seat entertainment experience with BMW Touch Command (the 7's optional and slickly integrated rear touchscreen tablet, £2705) and you can give yourself a workout with the Vitality Programme.

An 'active body training programme that relaxes and regenerates the muscles and takes pressure off the spinal discs on long journeys', the idea is simple enough. Instead of massaging you as you sit slumped after a tough 18-hour day in the office, the programme encourages you to put the effort in yourself, working against resistance in the seat to improve posture, exercise muscles and boost circulation.

The first task is to calibrate the seat for you and your strength, so that

the car knows whether your pathetic efforts are actually pathetic or everything you've got. You're then taken through a series of exercises, from heaving against different parts of the seat to stretches that the car can't evaluate but trusts that you're doing. During the pushing exercises, a visual representation of your effort appears on screen, with star ratings to keep you from losing interest, pouring a generous Talisker and using the tablet to buy things you don't need on eBay.

The first thing to note is that you'll feel very silly doing this, contorting body and face like you're struggling with a particularly vindictive bout of constipation. But the on-screen prompts, delivered in incredible clarity on the 7's high-resolution, tilt-adjustable 10-inch screens are excellent, and it's surprising just how quickly you feel a bit of colour coming into your cheeks. Even if you're not a complete stranger to the inside of a gym, chances are you'll find yourself getting a little warm and out of breath, assuming you were honest during calibration and really did push as hard you possibly could.

BEN MILLER

3 steps to an in-car six-pack



1

SITTING COMFORTABLY?

Grab the Touch Command tablet, select the seat you're sitting in and fire up the Vitality Programme



2

DO AS YOU ARE TOLD

Follow the on-screen prompts to calibrate the seat to your strength. Push and relax at the right moment or the system won't play ball



3

ARE WE HAVING FUN YET?

Get stuck in as the programme works its way around your body, subjecting it to several sets of repetitions. Stretch, push, relax, go a bit red in the face, feel good



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The official fuel consumption figures in mpg (l/100km) for the Renault Clio Renaultsport 220 Trophy are: Urban 37.2 (7.6); Extra Urban 55.4 (5.1); Combined 47.9 (5.9). The official CO₂ emissions are 135g/km. EU Directive and Regulation 692/2008 test environment figures. Fuel consumption and CO₂ may vary with driving styles, road conditions and other factors.

Boxing clever

Porsche's all-new flat-six

Any new 911 engine is a big deal, but turbo too? Here's the lowdown

WHEN JÖRG KERNER, Porsche's vice president for powertrain development, arrived at Weissach four years ago from Audi, where he developed the RS6's thundering V8 and the five-cylinder RS engines, he promised his bosses that the new flat-six would be 'the benchmark for response from a turbocharged engine'.

First impressions of the 991.2 Carrera and Carrera S are that Kerner may just have pulled it off – a downsized, more efficient flat-six with much of its wondrous response and character intact. Here's how.

Peak boost pressure
in the 365bhp
Carrera is 0.9bar;
414bhp Carrera S
runs to 1.1bar

5 Let there be oil

Unlike inline or vee-configuration engines, flat-sixes don't have gravity to help the engine's oil flow back to the sump. The 911 boasts a complex lubrication system, not least to keep the low-mounted turbos oil-fed and happy. As well as the main steady-state pump, which provides 2-3bar of oil pressure by means of a variable pump (oil pressure is increased under heavy load and hard acceleration), the engine uses three soak pumps: one for each cylinder head and a third specifically for the two turbos. Each blower has its own oil canister, from which hot lubricant is drained and recirculated back to the sump.

①

Light and future-proofed

New engine block is manufactured from hypereutectic aluminium; stiffer, more resistant to thermal expansion and 1.5kg lighter than the old block. Plasma-sprayed iron cylinder liners help reduce fuel consumption and cope better with the poor fuel grades found in India and China. A composite oil pan saves a further 2kg over the previous engine.

Both 2981cc launch engines share the same 91.0mm bore and 76.4mm stroke, 10:1 compression ratio and 7500rpm rev limit. The bore spacing allows for larger capacity engines in the future, naturally.

Maximum power is developed at 6500rpm for both engines, where the naturally-aspirated 991 Carrera S needed 7400rpm on the tacho. Progress? The hairs on the back of your neck may disagree, at least until they feel the shove of torque from just 1700rpm.

②

Banishing the lag

Porsche is being cagey about the six's patented turbo management system and its electro-pneumatically controlled wastegate. Designed to minimise lag, the Achilles heel of blown engines, it works to maintain optimal turbo speed and pressure. The ECU analyses throttle position and juggles several parameters – the wastegate, ignition timing, the adjustable exhaust camshaft, intake valve lift and duration via the VarioCam Plus system – to provide instant response.

③

High-pressure injection

Each bank has its own high pressure pump for the centrally located injectors, delivering fuel at 250bar, for optimal atomisation, minimal cylinder-wall wetting and low CO₂ emissions.



Active management of boost pressure is key to the six's lag-free responses



④

On-demand cooling

Smart electronics declutch both the air-conditioning and water pumps when not needed to reduce engine drag. The engine quickly reaches its initial 90°C operating temperature, then settles back to 85°C in normal running, during which the coolant circulates more slowly.



Carrera S now
0.2sec quicker to
62mph and 4mpg
less thirsty





peugeot.co.uk/PureTech

Presented by engine technology international magazine

1-litre to 1.4-litre

PSA Peugeot Citroën

1.2-litre three-cylinder turbo

PURE TECH



WE TOOK
AWAY A
CYLINDER
AND THE
**ENGINE
OF THE
YEAR
AWARD**

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PureTech ENGINES

MOTION & EMOTION



PEUGEOT



Musk: 'It's important for business to make money, but there's a higher purpose here'

system, like going electric. I hope the result will be to push car companies to accelerate their zero-emission vehicles. If I was taking over VW, I'd say we're going to be the EV leader. That's how you restore public faith.

► **IF IT** were possible to build a long-range, affordable electric car right now, we would. Even after government subsidies, the Model S is still fairly expensive, so well-off people are paying for the mass-market car's R&D. The money we're making – or not making – is going towards the affordable car. But we need the gigafactory running to make an affordable, long-range, electric car.

► **I'M NOT** aware of any battery that's better than what we'll be producing in

the gigafactory. If a company thinks it has [a breakthrough], they'll usually call Tesla first because we have more battery volume than anyone else. We expect to be producing the first batteries around spring 2016, but very large-scale production would only happen around the end of 2017, with the Model 3.

► **TECHNOLOGICALLY** a fully autonomous Tesla will be possible in about three years. Then it will be up to regulators. They will want to see a lot of statistical evidence that in autonomous mode it's safer than a car driven by a person. A new rule takes at least a year, sometimes 3 or 5 years, it depends on the region.

► **WE WANT** to have both engineering and production activity in Europe. It's a fairly good likelihood we'll have an engineering centre in the UK. Our focus right now is on Model S and X, we'll probably start thinking about UK locations next year.

► **EVENTUALLY THE** public will insist on a fair CO₂ price: the environmental situation will be too serious for people to let it go. But inertia is so high: by the time it's obvious in daily life, [there will have been] an enormous amount of damage.'

INTERVIEW BY PHIL McNAMARA

©@CARPhilMc

The next big things

by the boss of Tesla Motors

Elon Musk, electric car evangelist, space explorer and real-life Tony Stark, talks about Tesla's higher purpose

'TESLA'S GOAL IS TO change the world and accelerate the advent of sustainable transport. It is important for business to make more money than it spends, but there's a higher purpose here. We need to make sure the future's going to be good, otherwise a [bulging company] bank account doesn't mean anything.

► **IN THE** short to medium term, all our cash resources are focused on how do we increase volume and lower the price long term. It's a huge investment and risk, in the [Nevada battery] gigafactory and the Model 3 [small car]. Ultimately we need to make a profit but that'll take a while. Our aspiration for next year is to break even.

► **WHAT I** imagine has happened with VW: engineers were under a lot of pressure to make improvements, they ran into a wall of what's possible, and after that trickery was the only option. What we really need is a fundamental change of

FRESH THINKING: Tesla's Europe push

It's double Dutch for Model S assembly

A European car plant: so what?

Ah yes, but Tesla's assembly facility in Tilburg, the Netherlands, has doubled in size to make 20,000+ pure electric Teslas a year – not far off half the 58k EVs sold in Europe in 2014.

Wow. Has it sparked a supply chain and lots of jobs?

Not yet: unlike old-school car plants, there's no stamping or paint shop: the Model S cars arrive fully-built, four to a container, though with drivetrains removed for safety. The 90 employees fit the battery, motor and rear axle, and make quality checks. **Sounds clunky: won't it cause a**

bottleneck at HQ? Tesla's Californian factory used to build 500,000 cars for GM/Toyota, ten times Tesla's Model S output last year. 'Long-term it makes sense to localise production, then you address the foreign exchange risk, and it's logically better,' says boss Elon Musk.

'When we hit the US ceiling, our Europe factory will start local production.' **Bet there's some cool tech on show?** Sure is: each car glides around on an automated dolly, and with zero emissions to worry about, the Teslas can hit nearly 70mph on an indoor test track. Neat.





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HANKOOK
driving emotion

FIRST DRIVES.

12 cars tested, starring Audi A4, Merc A45 AMG, Peugeot 308 GTi, Lexus RX, new Astra & four hot-ish diesel hatches

SHOCK NEWS FOR anyone who thought self-driving cars were a far-off figment of Elon Musk's imagination – Audi has gone and built one. Not the robot RS7 that's been seen setting solo lap times at various race events over the past 12 months. No. The brand new Audi A4, due in dealerships imminently.

Now, we're not quite at the stage where the A4 will drive you home from the pub after that post-work drink morphs into a massive set-the-world-to-rights bender, but the 2015 version of the car that really defines Audi has no fewer than 30 driver and safety assistance systems. Unsurprisingly, you don't get all of these as standard, and admittedly most are imported from the more rarefied Q7, but extend the options list to its full potential and you'll end up with a junior executive saloon that's as keen to take the wheel as you are. Possibly more so.

The A4's first stand against human incompetence comes with Traffic Jam Assist. Assuming your A4 is equipped with the inevitable automatic transmission, and you've got the adaptive cruise and self-steering lane assist functions optioned and switched on, Traffic Jam Assist will

detect said vehicular preserve and, for as long as your speed stays below 40mph, take care of the tedious stickiness for you. Not only will it speed up, slow down and when necessary, stop, it will also analyse the trajectory of the cars in front of you in order to not just follow them along the road but also steer round any obstacles – *by itself*. Feeling redundant yet?

Predictive Efficiency Assistant (PEA) is strike two. This little ray of sunshine moves adaptive cruise control on from registering and obeying the speed limit to incorporating sat-nav data in order to pre-emptively reduce your speed ahead of corners, roundabouts and even hills. You don't even need to have a route set for this to work, and the first time it decelerates the car for a roundabout you'll do a little squeal; forget Big Brother, this Audi is definitely watching you. PEA is apparently worth fuel savings of up to 10%, and if the cruise isn't active an icon appears that encourages you to back off manually.

Other tricks intended to save humanity from itself include the usual auto-braking functions – including a new Turning Assist that stops you turning across the road in front of traffic – blindspot monitors, and a device that warns you

against opening the doors into traffic. Pre-sense systems also mean that should you foil the A4's exhaustive efforts and create an accident, the Audi will do its utmost to protect you. How long before it decides that, actually, we aren't worth the bother?

Don't panic, yet. Just as Audi Drive Select allows you to tailor the powertrain, steering and – where fitted – adaptive damping, you can dive into the MMI menus and tweak the degree to which any of these assistance systems intervene. And at the moment that includes switching them off. Handy, since Ingolstadt has also spent a great deal of effort making the new A4 considerably better for us long pigs to drive.

Not to the extent that you'll be wanting to cancel the 3-series or XE order if you're really keen to show those pesky apexes what's what, but the new A4, which is as much as 110kg lighter than the old A4, both rides and steers with increased adroitness. Ironically this is particularly true of the toyed-up to ▶



Take the time (3 days or so) to turn off all the A4's assist systems and you'll find an entertaining car

AUDI A4

Clean-sheet of A4

Same style, evolved substance. Meet the lighter, cleaner, sharper, quieter and more sentient new Audi A4. You may need it more than it needs you

Photography Charlie Magee



FIRST DRIVES.



Smart and finely wrought, sure, but cluttered too – a step backwards?

semi-sentience, range-topping 3.0-litre V6 TDI S line pictured, which benefits from 268bhp and a quattro four-wheel drive system that's biased 40:60 towards the rear – and can shift the mix up to 70% fore and 85% aft, as required.

Dial the adaptive dampers up to Dynamic and this combination will carve around a mountain with something akin to enthusiasm, staying both flat and composed on its new five-link front and rear suspension while the quattro and 443lb ft do their best impression of a slingshot. Even the conventional eight-speed Tiptronic auto is largely cooperative, and you do get used to the – also optional – variable ratio Dynamic Steering. This ranges from light and surprisingly delicate in Comfort to truly meaty in Dynamic.

Audi's been working hard to keep the big six relevant, so while this and its more humble 215bhp sibling remain an indulgent choice, the CO₂ and mpg penalties are hardly crippling considering the smooth thrust you get in return. How the new A4 copes without adaptive sus-

pension is a secret the firm is keeping close to its chest (conventionally-suspended cars weren't available to drive), but 19-inch wheels didn't cause the 268bhp version to pop any vertebrae on reasonably varied Italian tarmac.

The preordained best-selling 2.0-litre TDI was strangely less fluid, thumping far more noticeably over expansion joints despite the littler lump and smaller 17s necessary to achieve Audi 'Ultra' efficiency status (just 99g/km CO₂ on the 148bhp four; 102g/km for 187bhp). The front-wheel-drive chassis is nothing to be

ashamed of, being keen and tenacious enough in direction changes, if hardly a danger to your adrenal gland; but the standard steering is a touch numb, and the six-speed manual gearbox unpleasant, being especially vague from second to third. Most will suffer the single g/km of CO₂ and £1530 it costs to upgrade to a dual-clutch seven-speed S-tronic anyway.

There's a trio of turbo petrels, too – including an intriguing 187bhp 2.0 with modified Miller cycle parsimony – but even combined they'll account for single-digit sales percentages in the UK. Whatever you pick, refinement won't be an issue, as the aero-acoustic benefits of the new A4's 0.23Cd makes it almost as quiet inside as an A8. There's a bit of whistle around the wing mirrors on the motorway but otherwise little to detract from the 19-speaker Bang & Olufsen 3D-sound stereo, and only the barest minimum of idling diesel clatter.

As per every other Audi introduced since the third generation TT, the A4 can be equipped with the fancy Virtual Cockpit digital instrument cluster, supplemented in this case by a

central screen and optional full-colour head-up display. Further techno-wizardry includes smartphone mirroring so you can get app-y via the car's central screen, wireless smartphone charging, and dual Bluetooth connectivity so you no longer have to choose whether it's work or home that gets you a Fixed Penalty Notice. You can also spec a pair of chunky Audi-branded tablets as a rear-seat infotainment upgrade and/or replacement for your iPad in the boardroom.

The interior quality is as impeccable as ever, but its design seems a little fussy and incohesive in places. Still, since you'll be whiling away plenty of downtime as the A4 drives you around, it's good to know that the new one has 25mm more front headroom and 23mm more rear legroom, making it a fine place to be. What was already the lankiest car in its class is now 25mm longer and 16mm wider; the A6 must be wondering what it did wrong.

But will the XE, the 3-series and the C-class be sweating? The A4 has always offered something different to the driving machismo of the BMW – and now the Jag – while the Mercedes dazzles with its aloof image and interior style. That difference, now more than ever, is a kind of cool intelligence that, while not without appeal, doesn't quite feel like enough to upturn our junior exec hierarchy at this initial introduction.

CJ HUBBARD @ir_427

Audi A4 S line 3.0 TDI 270

> Price £38,950 > Engine 2967cc 24V V6 turbodiesel, 268bhp @ 3250-4250rpm, 443lb ft @ 1500-3000rpm > Transmission eight-speed automatic, four-wheel drive > Performance 5.3sec 0-62mph, 155mph, 55.4mpg, 134g/km CO₂ > Weight 1735kg > On sale Now (due in dealers November 2015)

UP AGAINST

BETTER THAN BMW 3-series

At driving itself

WORSE THAN BMW 3-series

At being driven by you

WE'D BUY Jaguar XE

Pace, grace, less space



Having fun?
You'd be having
more in a
3-series or XE



LOVE

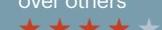
All of the toys,
very refined,
better to drive

HATE

Interior has lost a
little charm, HAL-
in-waiting vibes

VERDICT

Nice upgrade for
existing A4 fans,
not sure it'll win
over others



Searing Matrix LED
headlights perfect for
levering stray vans from
the 'fast' lane

Remember ix35?

Well, it's time to move on – that name is dead, replaced by Tucson. You might like it, if you can remember it

EXCHANGING A meaningless name for one that everyone will mispronounce, the Hyundai Tucson replaces the ix35 crossover and in doing so dusts off a nameplate last seen in the UK attached to a slightly gawky SUV eight years ago. It's the better-known badge of the two around the world, and Hyundai has global market intentions for this newest crossover on the block, hence the name change.

Looks smart enough, wearing its on-trend body creases and Cheshire-Cat-with-chrome-braces



Expect a lot of blackness, though it's far from empty blackness – kit level is high

grille with confidence. Overriding impression is of a slightly smaller, more sweetly-proportioned Santa Fe. Not sure what happened to the interior, though, because it's possibly the least memorable cabin of the year. Spot-on ergonomics and more storage space than you'll ever need, granted, but would a bit of visual light and shade have killed anyone?

Still, the Tucson's nondescript environs come loaded with kit. Mid-table SE Nav trim gets heated seats, cruise control, parking sensors and the eponymous sat-nav, and all for less than £23k if you pick the smallest diesel engine. That's a slightly droning 1.7-litre with a power delivery like a monk's haircut – plenty in the middle but nothing up top. Forget overtaking; best to keep the revs down, relax and enjoy the £1400 or so saving over the cheapest 2.0-litre, as most Tucson buyers are predicted to do.



A larger car than the ix35, the Tucson packs enormous rear legroom and a bigger boot than many of its rivals (with a full-size spare wheel, too). With surprisingly sharp steering and a flat cornering stance (but occasionally pattery ride) it's even in danger of being vaguely fun to drive. Boiled down to the basics, the Tucson's as good a car as any of Qashqai, Kadjar, Kuga and co. It's roomy, frugal, fine to drive and finer to look at but in a sector that seems to grow by the hour, it could do with a little something – anything – to help it stand out. It's a perfectly good car, just a rather forgettable one. Pity.

JAMES TAYLOR @JamesTaylor_5

500 miles apart but there's a little Santa Fe in Tucson

Hyundai Tucson SE Nav 1.7 CRDi

- > **Price** £22,795
- > **Engine** 1685cc 16v turbodiesel 4-cyl, 114bhp @ 4000rpm, 207lb ft @ 1250-2500rpm
- > **Transmission** six-speed manual, front-wheel drive
- > **Performance** 13.7sec 0-62mph, 109mph, 61.7mpg, 119g/km CO₂
- > **Weight** 1662kg > **On Sale Now**
- > **Rating** ★★★★

VERDICT Entirely decent, but blander than celery stew

MINI CLUBMAN

Maxi Mini gets serious

PROGRESS, QUANTIFIED: one more door, an additional 260mm between the wheels and an additional 100 litres of boot space. Like the five-door hatch, this Mini has gone maxi, but when Kacher can sit behind Kacher, any wheelbase surgery deserves full marks.

More than all other models, the Clubman stands for the new face of Mini. Which is another way of saying that the loud, sticker-laden years are over. The next era prioritises understatement, *zeitgeist*, advanced engineering. Like a new eight-speed auto with a coasting mode, a new packaging concept that makes Clubman fit for a life beyond the city, and a new level of perceived quality.

Until next year's 250bhp JCW, the widest grin is triggered by the Cooper S's 189bhp petrol. Both units are available with the bony six-speed manual or the slick auto. The driving experience does not differ much from what we have on record for the five-door hatch. The Clubman feels agile in Sport, balanced in Normal and toothless in Eco. Although chuckable, it quickly runs out of traction in the wet, and with DSC switched off it behaves like a better dressed reincarnation of the rowdy lift-off-prone Peugeot 205 GTi.

Solemn, solid and serious enough to justify the price, the Clubman nevertheless feels sporty enough to satisfy the child inside.

GEORG KACHER

Georg studiously ignores the Clubman's cockpit ritz



Mini Cooper S Clubman

- > **Price** £22,755 > **Engine** 1998cc 16v 4-cylinder turbo, 189bhp @ 5000rpm, 207lb ft @ 1250rpm >
- > **Transmission** eight-speed auto, front-wheel drive >
- > **Performance** 7.2sec 0-60mph, 142mph, 45.6mpg, 144g/km CO₂ > **Weight** 1360kg > **On Sale Now**
- > **Rating** ★★★★

VERDICT Not cheap or cheerful, but good



MERCEDES A45 AMG

Hatch arms race moves to Defcon 1

Mercedes makes a virtue of A-class's unforgiving nature in the newly too-hot-to-touch A45

ANY DAY NOW the hot-hatch arms race is going to have its Cuban Missile Crisis, but while the escalation goes on we'll keep riding the wave. The overpowered and overpriced Audi RS3 lasted but a few weeks at number one – knocked firmly off its perch by this, the new Mercedes A45 AMG, first of the newly made-over A-class range.

The A is not popular with motoring writers, but I have always been fond of the A45. AMG has fed its baby Q-car even more power and torque while adding another grand to the already steep price. At 376bhp (up by 21bhp) and 350lb ft (up by 18), it edges the RS3 by 9bhp. In launch assist mode it will hit 62mph in 4.2sec, thereby eclipsing its predecessor by four tenths and the Audi by 0.1sec. The

Bernd Schneider's pace car, and it isn't good: too much understeer, diminishing grip, unfamiliar handling, engine running out of revs in third and fourth, wheelman at odds with pedals and paddles, confidence dwindling fast. I ask Bernd for advice. 'This car requires a different technique and its own rhythm,' he tells me. 'To make it shine you must be very hard on the brakes and dial in really radical steering angles.'

A-ha! Brake hard? Yep. Hard and late. It's not just the exemplary deceleration apparatus that does the trick but also the tenacious grip of the 235/35 R19 tyres. Radical steering angles? You bet. That's radical as in arms crossed with the throttle mashed and the engine riding the crest of the torque wave. In the AMG GT, this technique would send you into a huge spin. In the A45 it pulls you through and then pushes you out past the apex, gaining momentum. That's the effect of awd and torque vectoring which support the steering by maintaining a sweet cornering balance. New driving style? Absolutely.

The track cars were fitted with the optional Dynamic Plus pack, Ride Control sport suspension and a mechanical front-axle diff-lock. Ride Control lets you choose from two damper settings and steering weights while adding Race mode for reduced ESP intervention, quicker shifts and faster throttle action.

Out on the road the A45 AMG doesn't cope well with patchwork surfaces and with dips or

best-in-class mpg of 40.8 and the 155mph top speed remain the same – unless you spend a fortune on the Driver's Package, chipped for 168mph.

My first taste is on track, behind legend



crests where the rebound is usually harsher than expected. Although Dynamic Select (previously known as Agility Control) does include an individual drive programme, you can only coast in Eco, you must accept an automatic one-gear downshift in Sport/Sport+/Race, and you can't pair a fast throttle action with a relaxed transmission set-up. But the A45 is a bold statement, and you can embolden it further via the options list – winged aero kit, 19in alloys, blaring performance exhaust, bucket seats and a matte paint job. Tick all the boxes and it's pricier than a base C63 AMG.

Now, more than ever, the A45 addresses drivers who find the RS3 too blunt and the M135

too sharp. Its engine is more brutal, the brakes are sensational and the roadholding is sponsored by Superglue. Yes, you need to adapt to the handling characteristics, but the addictive fluidity of motion and the unerring composure make the latest iteration of the brawny Benz, at least in my book, even more compelling.

GEORG KACHER



In the A45 you don't lift before turning in, just keep it pinned and wind on lock. Sounds cruel, but it works

Mercedes A45 AMG 4Matic

Price £39,995 (est)
Engine 1991cc
 16v turbocharged
 4-cyl, 376bhp @
 6000rpm, 350lb
 ft @ 2250rpm

Transmission
 7-speed DCT auto,
 4wd **Performance**

4.2sec 0-62mph,
 155mph (ltd),
 40.8mpg, 162g/km
CO2 Weight 1555kg
On sale Spring 2016

► **LOVE**
 Grunt, grip, poise
 and panache

► **HATE**
 OTT detailing,
 unfeasible price

► **VERDICT**
 Better than its
 reputation. Also
 better than RS3



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PEUGEOT 308 GTI 270

One sickeningly good Pug

Like a little adjustability with your hot-hatch grip? Live to turn passengers green? You'll love this

N A MARKET obsessed with lap times, spoilers and high-performance bragging rights, the Peugeot 308 GTI's subtle, less-is-more approach could prove a tricky sell. This would be a great shame – the GTI is a good car and deserves to succeed. I realised this as I chased Peugeot's test driver down Tour de France routes as fast as we could pedal, throwing the car at each corner, feeling the soft front end take a moment to settle, then sensing the reassurance through the steering as the front Michelin refused to understeer. Allow the stiffer rear to slide slightly, scrubbing off speed and tucking the nose into the apex, and the 308 delivers the kind of adjustability we remember from the Great Peugeot Hot Hatch Days. At the end of the road I couldn't stop smiling and the PR man in another car simply stuck his head out of the window and vomited. The 308 GTI really is that good.

You can choose your GTI in two flavours: the 250 and 270, which translates to just a little less in horsepower, and a one-size-fits-all 243lb ft. In either guise you get a chassis lowered by 11mm, uprated dampers, and springs stiffened by 60% at the front and 100% at the rear compared with the 308 GT; there's also more camber, bespoke steering calibration, 19-inch alloys and some very discreet styling.

To this, the 270 adds a Torsen limited-slip diff, Alcon four-piston calipers with 380mm front brake discs, bucket seats and the option to compensate

for the GTI's discretion with a daft 'Coupe Franche' two-tone paintjob. The 270 retails at £28,155, the 250 at £26,555, but Peugeot expects 80% of customers to opt for the 250. Surely the 270 will out-sell the 250?

The 270's bucket seats grip well, with a hip point noticeably dipped to the ground for a sporty feeling, but you're still perched too high. Other interior flaws include a steering wheel that obscures the speedo and rev counter, pedals that could be more sweetly aligned and a centre console that's harder and more pared back than Amish furniture. But gloss-black trim, perforated leather, red stitching and alcantara do create a premium ambience.

Peugeot says the 308 GTI – five-door only, as are all 308s – has been designed to be suitable for family duties, and is less hardcore than the 208 GTI 30th. It feels supple, albeit with an underlying firmness to the damping, while the light steering delivers a tease of feel and a slightly over-eager self-centering action. But this is a nice car to mooch about in – there's even plenty of space in the back.

But it's when you wind it up that the 308 shines. That downsized engine is flexible, pulling with real muscularity from 2400rpm. It might be smaller than the Golf GTI's 2.0-litre, but it punches 50bhp harder, gets to 62mph half-a-second quicker, and delivers the same 47mpg and 139g/km CO₂. Press the Sport button and the engine note gets rortier and the throttle sharpens up – the steer-



See that rear end?
It likes to move
around a bit, if
you're up for it

ing or suspension doesn't adjust, which is pleasing – but the extra zing seems to make progress jerkier and clumsier. It also turns the dials red, so you can no longer see the redline.

The brakes are strong and refuse to wilt under heavy pressure. There is some scrabble and understeer through tighter turns – Peugeot has shied away from the trick front suspension favoured by the Megane RS and Civic Type R – but the GTI puts its power down pretty well, its diff proactively sucking you into the apex on the open corners you'll take at full noise. Really, though, it's the corners somewhere

in-between – not flat-out fast, not too tight – that bring out the best in the 308. It feels agile, adjustable and, at a claimed 1205kg, it's certainly light, although that figure relates to a version not sold in the UK.

When Peugeot asked the UK to sell the last-generation 308 GTI, the UK baulked, dropped the 'T' and gave us a 308 GT. This time that 'T' remains appended because Peugeot UK believes it's got a successor to the excellent 306 GTi-6. I can understand the confidence.

BEN BARRY @lamBenBarry

Peugeot 308 GTI 270

> **Price** £28,155 > **Engine** 1598cc 16v 4-cylinder turbocharged, 266bhp @ 6000rpm, 243lb ft @ 1900rpm > **Transmission** six-speed manual, front-wheel drive > **Performance** 6.0sec 0-62mph, 155mph (limited), 47mpg, 139g/km CO₂ > **Weight** 1205kg > **On sale** Now

▶ **LOVE**

Agile chassis,
under-the-radar
looks

▶ **HATE**

Looooong gear
change

▶ **VERDICT**

Credible
alternative to a
Golf GTI



And the game is raised

Reduced weight and tidy handling at the expense of a little refinement – that's the new Astra way

FIVE CENTIMETRES
shorter, 2.5cm lower and, impressively, an average 130kg lighter across the range than its predecessor, this all-new Astra is not a bad looking machine, even if it does lack the outright visual verve of its predecessor.

Interesting detailing includes a welcome reduction in grille chrome weight through the bifurcation of the old horizontal bar, the Danese Milano Ameland paper knife-aping lower door creasing and the architectural bow-tie that is the C-pillar.

The interior, however, constitutes a proper, seven league boot-stride forwards. The dash is clean, tidy and functionally intuitive, with a far better integration of the touchscreen than many premium marques can be bothered to execute. The driving position's first class, the front seats are particularly comfortable and, despite a shorter overall length, there's now more rear legroom.

On the down side, trim is still somewhat chrome-heavy for my taste, and driver ergonomics are, at a stroke, smashed to matchwood

on the rocks of a pointless centre console armrest that jarringly obstructs the elbow with every gear shift. An outstandingly annoying feature, and a real shame.

The key engine in the range is arguably the 134bhp 'Whisper Diesel' variant. With 236lb ft of torque on tap and the car's weight reduction lopping nearly a second off its predecessor's 0-60mph time, the turbodiesel is lusty enough, and well complimented by a pleasantly smooth, accurate gearchange.

I might take issue with the 'whisper' prefix, however; that weight loss also appears to have involved a reduction in insulation, as evinced by the occasional boom from the engine bay, and the predominance of some unwanted and intrusive road noise over all else at everyday cruising speeds.

Interestingly, suspension marrying front MacPherson struts to a rear torsion beam abetted by a Watt's linkage was honed on some of this magazine's favourite Welsh roads, and those settings then exported to Opel for pan-European adoption.



And it shows. Displaying a finely wrought balance between ride comfort and handling enthusiasm, the Astra feels engagingly agile and light on its feet. It soaks up bumps, undulations and poor surfaces with admirable aplomb, yet stoically resists understeer.

Extremely easy to hustle along albeit, the only caveat associated with the Astra's newfound agility and verve is a gentle lack of communication of same through the controls – oh for a whiff more feel from the steering.

Undeniably earning its podium position alongside the Golf and Focus, we'll find out shortly if the Vauxhall is finally good enough to rearrange a long-established pecking order...

ANTHONY FFRENCH-CONSTANT

The wrong side of the road holds no fear, so confident is he in the Astra's newfound agility



See that centre console armrest? You two will be sworn enemies

Vauxhall Astra SRi NAV 1.6 CDTi 136PS S/S Manual

- **Price** £21,480
- **Engine** 1598cc 16v 4-cylinder turbodiesel, 134bhp @ 3500-4000rpm, 236lb ft @ 2000rpm
- **Transmission** six-speed manual, front-wheel drive
- **Performance** 9.0sec 0-60mph, 127mph, 72.4mpg, 103g/km CO₂
- **Weight** 1350kg
- **On Sale Now**

LOVE
Fine balance of ride comfort and handling agility

HATE
Interior chrome, obstructive console box

VERDICT
Closes the gap on the class leaders



The 'spindle' grille is now so big it looks less like a spindle and more like, well, a ridiculously huge grille



LEXUS RX450h

Licensed to not thrill

The design has moved on, but the hybrid drivetrain hasn't. So now RX is off the pace both literally and technologically

YOU GET A LOT of Lexus RX450h for Mercedes GLE or Volvo XC90 money, but in the end the RX lives or dies by its hybrid drivetrain, with its promise of slashing fuel consumption and CO₂ emissions. In real life, however, Lexus seems to be treading water as far as its hybrid technology is concerned. Where is tangible progress like a modern plug-in layout, lithium-ion batteries or a frugal lightweight combustion engine to partner the e-motors?

'We know how to do a modern PHEV,' says chief project manager Takayuki Katsuda. 'But the plug-in technology is expensive, it carries a weight and packaging penalty, and it only makes ecological sense when powered by CO₂-neutral electricity. The full hybrid is affordable, reliable and popular. It has helped the

RX to attract 2.2m customers over time.'

Although the aggregate power output of the drivetrain has gone up from 296bhp to 310, the key hardware elements are familiar: a normally-aspirated 3456cc V6 rated at 263bhp, a 167bhp electric motor co-driving the front wheels and a separately operating rear propulsion unit good for an unchanged 68bhp. The peak combined torque is in the area of 332lb ft. The stepless CVT transmission has eight virtual ratios and drives only the front wheels. Rear-wheel drive is purely electric, which makes much more sense in town than off the beaten track where the car's weighty front end can get stuck before the tail summons sufficient push. On the road, part-time awd is bound to improve traction and grip as you approach the limit of adhesion, but since the hind legs act late and abruptly, they don't do all that much to improve the staid handling. Weighing up to 2.2 tonnes depending on spec, the RX takes 7.7sec to hit 62mph. While the top speed is limited to 125mph, Lexus is quoting an impressive 54.3mpg. Why impressive? Because beyond regular filling station visits, this cordless hybrid must generate its own supplementary energy.

The new RX is longer (by 120mm) and wider (by 10mm), it offers 50mm more rear legroom but still no third row of seats. More slippery (Cd: 0.32) and quieter than last year's car, it can be had with various new assistance systems which are programmed to keep you on course,



Still uses the old, square controller toggle instead of new touchpad

swiftly yet safely. All perfectly in line with the character of a model less interested in power than in efficiency, refinement and the sound quality of up to 15 speakers. Like its predecessor, it offers a smooth ride, low noise and Bentley-esque cabin.

So why don't we love the RX like the Americans, who buy most of them? Because there's nothing here for the keen driver. The howling rubber-band-effect CVT 'box, the nose-heavy handling, the uncommunicative steering and the flaccid brakes all make us frown. Although this is a compelling freeway waster, it lacks mid-range punch, long legs and the faintest trace of interest

in going round corners. When pushed, it swiftly becomes edgy and stressed, but the ho-hum dynamic talents can be improved by specifying adaptive dampers, active anti-roll bars and bigger tyres.

The RX relays a strong feelgood message. It can't match its European rivals for overtaking urge, but at the end of a leisurely cross-country journey it's the Lexus driver who will feel more relaxed and – in a broader context – more satisfied.

GEORG KACHER



Lexus RX450h

Price £46,995 **Engine** 3456cc 24v V6, 263bhp @ 6000rpm (310bhp with electric motors), 332lb ft @ 4600rpm **Transmission** Eight-speed CVT, four-wheel drive **Performance** 7.7sec 0-62mph, 125mph (ltd), 54.3mpg, 120g/km CO₂ **Weight** 2105kg (est) **On sale** January

▶ LOVE

Build quality, plush ride

▶ HATE

Uninvolved handling

▶ VERDICT

Ageing hybrid system fails to convince



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So there's no such thing as a diesel hot hatch?

We say there is. They may be too understated for boy racers, but they make a lot of sense to us. Who best nails the brief? **By James Taylor**

VW Golf GTD

A diesel hot hatch? No such thing, dear boy...

Volkswagen begs to differ. In fact, it reckons it all but invented the genre with its original 'Gran Turismo Diesel' Golf in 1982. Same chassis as the GTI and even more torque, so all the fun without lower running costs and less guilt. In theory, anyway.

All go-faster stripes and sill extensions?

Blingy 18in wheels apart, it's understated. Classy, even. The red grille stripe's been switched for chrome but at 20 paces you could mistake it for a GTI – which is the intention. You still get tartan seats.

Does it actually go like a hot hatch?

Not quite the full-fat GTI. Eight tenths, maybe. The GTD feels least diesel-ish of the quartet, delivering its torque early and very smoothly. Of course, it is a diesel, so the fun hits a glass ceiling at 4000rpm, but up to then the shove is mighty.

Ford Focus ST TDCi

A diesel hot hatch? No such thing, dear boy...

Can't ignore an open sales goal. Since a diesel engine was added to the ST line-up in tandem with its 2015 facelift, sales have been split an even 50:50 between the identically priced derv and petrol versions. Just don't call it the STD. Ford doesn't like that.

All go-faster stripes and sill extensions?

Sneakily, Ford's made the diesel ST look identical to the petrol one, without even a TDCi badge above its centre exhausts. And since its facelift the ST no longer looks like a guppy fish with a roof spoiler.

Does it actually go like a hot hatch?

Certainly gets a move on. Subjectively it feels about as quick as the Golf, but its glut of torque comes in with more of a wallop. Well-chosen gear ratios keep you right in the middle of it, but there's little point chasing the redline.



Shot on location
at a notorious
dogging spot
(they tell us
afterwards!).
We made our
excuses and left



Alfa Romeo Giulietta JTDM-2 vs Seat Leon FR 2.0 TDI

A diesel hot hatch? No such thing, dear boy...

Not even Alfa, a company whose entire brand ethos is built on petrol fumes, can overlook the need for a beefy diesel in the Giulietta line-up. 2.0 JTDM-2 is actually the least hench powerplant here, but with 172bhp and 258lb ft it's hardly anaemic.

All go-faster stripes and sill extensions?

Either a real looker or just fussy looking, depending on how fussy you are yourself. Wheels with many spokes cover optional racy red calipers on our test car. Metallic brown paint optional, thankfully.



Being like TOWIE:
pretty but not clever

A diesel hot hatch? No such thing, dear boy...

On the Seat thermometer, Cupra is hot and FR is warm, but the top 2.0 TDI gets essentially the same engine as the Golf GTD. Of course, the rest of the car's effectively a Golf too, only with a crisper-pressed suit – and a lower price tag.



Having Golf breeding,
but in a cheap suit

All go-faster stripes and sill extensions?

All jaunty angles and creases. LED lights are a no-cost option, while FR trim has 17in wheels and lower suspension. This one's a 3dr SC; 5dr's still cheaper than a Golf.

Does it actually go like a hot hatch?

Not slow, but sounds noisier than it feels fast. In its most potent 172bhp guise the JTDM-2 comes with a twin-clutch auto 'box, with odd-feeling ratios – there's a huge step from third to fourth. Did they fit an extra fifth by mistake?

Does it actually go like a hot hatch?

Sure does, until you venture near the top of the rev counter. Same as the other three, then. Proof again that a quick hit of diesel torque isn't ultimately as satisfying as free-revving petrol flexibility. DSG auto 'box knocks the Alfa's TCT for six.

CONTINUED...

CONTINUED...

VW Golf GTD

Does it sound like a Massey Ferguson?

Far from it. Best of the bunch for refinement, though Focus and Leon not far behind. VW claims 67mpg if you pick the positive-feeling, foolproof manual – we would.



What about corners? Repmobile or rally car?

One very fine-handling car, with pull-your-face-off grip and brakes. Safe, soft-edged understeer heralds the limit. VW doesn't offer the GTI's line-tightening mechanical diff option. Spoilsports.

Are you sitting comfortably?

Brilliant seats, and not just because they're tartan. Fantastically supportive, without packing bolsters so high you can't get out of them. Odeon-spec 8in infotainment screen a great, but pricey, option.

Verdict

The obvious, predictable choice. For good reason. Nasally-administered price justified by sky-high residuals, and the fact it's so annoyingly good at everything.

Ford Focus ST TDCi

Does it sound like a Massey Ferguson?

If you're concentrating hard enough. But most of the time it's just a smooth, indistinctly bassy note. Could easily fool your passengers. Even Stevens with GTD for mpg.



What about corners? Repmobile or rally car?

Where the VW Group pair remain resolutely planted, the ST just wants to frolic and gambol like a 5dr gazelle. Pointy front end and a skatty rear, but ultimately always stable and secure. In the dry, anyway.

Are you sitting comfortably?

Most sports seats hold you like a bear hug; the ST's bulging thrones seem determined to spring you out of them. Maybe they'll wear in, like the cheap trainers they resemble. Recently de-buttoned centre console all the better for it.

Verdict

Takes itself least seriously of the cars here. No bad thing. Playful handling, monumental mid-range poke and oodles of kit for the cash. Less snooty alternative to the MQB brigade.



**VW GOLF GTD 2.0 TDI
5DR MANUAL**
► **Price** £27,590
► **As tested** £31,395
► **Engine** 1968cc 16v turbodiesel
4-cyl, 181bhp @ 3500-4000rpm,
280lb ft @ 2500-5000rpm
► **Transmission** Six-speed manual,
front-wheel drive
► **Performance** 7.5sec 0-62mph,
143mph, 67.3mpg, 109g/km CO₂
► **Weight** 1377kg
► **On sale** Now
► **Rating** ★★★★☆

**FORD FOCUS ST-22.0
TDCI MANUAL**
► **Price** £23,995
► **As tested** £26,515
► **Engine** 1997cc, 16v turbodiesel
4-cyl, 182bhp @ 3500rpm, 295lb
ft @ 2000-2750rpm
► **Transmission** Six-speed
manual, front-wheel drive
► **Performance** 8.1sec 0-62mph,
135mph, 67.3mpg, 110g/km CO₂
► **Weight** 1464kg
► **On sale** Now
► **Rating** ★★★★☆

Alfa Romeo Giulietta 2.0 JTDM-2

Does it sound like a Massey Ferguson?

Worse, if anything. Less Ducati, more Fiat Ducato van. Road noise goes all the way up to 11 too. Credibly high/low mpg/CO₂, though.



Fat, ugly steering wheel may conceal an asylum seeker

What about corners? Repmobile or rally car?

'DNA' switch still tries to ruin the Giulietta. Dynamic mode perks up throttle response a treat but turns steering so heavy you wonder if front tyres have punctured. Secondary ride thumpy, but most heinous crime is that it doesn't feel fun.

Are you sitting comfortably?

Certainly well cushioned. Seats' bolsters so chunky the armrest jams on them, as does your hand on the B-pillar when you try to adjust them. Sockets to charge your phone, but nowhere to put it; same goes for rear passengers' heads.

Verdict

You want to like it but can't. Below par in every measurable way – forgivable if it was overflowing with character and charm, but no. Rationally and emotionally, it misses the target.

Seat Leon FR 2.0 TDI

Does it sound like a Massey Ferguson?

Marginally noisier than the Golf (VW must have squeezed a bit more sound deadening in), but still impressive. DSG 'box hamstrings mpg and emissions; manual on par with GTD.



Green outside, black within. Chief colourist in need of psychoanalysis?

What about corners? Repmobile or rally car?

Like the Golf, the Leon gets 'XDS' electronics, mimicking a limited-slip diff by nipping the inside brakes to keep you on the apex and out of the hedge. Less playful than the Focus, but still ace.

Are you sitting comfortably?

Plainest interior of the four, though better laid-out than the Ford and just plain better than the Alfa. Plastics noticeably cheaper than Golf. Maybe the designers weren't allowed to tread on its toes.

Verdict

Misses out on Golf's nicer interior, badge smugness and sheen of premium-ness, but identical pace and equally superb chassis, space and comfort – for less cash.



ALFA ROMEO GIULIETTA 2.0 JTDM-2 TCT EXCLUSIVE

- > Price £25,840
- > As Tested £31,610
- > Engine 1956cc 16v turbodiesel 4-cyl, 172bhp @ 3750rpm, 258lb ft @ 1750rpm
- > Transmission Six-speed twin-clutch semi-auto, front-wheel drive
- > Performance 7.8sec 0-62mph, 135mph, 65.7mpg, 113g/km CO₂
- > Weight 1335kg
- > On sale Now
- > Rating ★★★★☆

SEAT LEON 3DR SC FR 2.0 TDI 184PS DSG

- > Price £23,870
- > As tested £26,475
- > Engine 1968cc 16v turbodiesel 4-cyl, 181bhp @ 3500-4000rpm, 280lb ft @ 1750rpm-3000rpm
- > Transmission Six-speed twin-clutch auto, front-wheel drive
- > Performance 7.4sec 0-62mph, 140mph, 62.8mpg, 119g/km CO₂
- > Weight 1370kg
- > On sale Now
- > Rating ★★★★★

'British roadsters are all extinct. Only one car maker serves up an affordable British-style roadster: Mazda'



A SAGE – OR was it a cynic? – once remarked that the golden age was never the present. When it comes to driving conditions, our sceptical saviour was undoubtedly correct. Traffic, speed cameras and social sentiment have tamed our former exuberance.

When it comes to fine sports cars, though, life has never been so bountiful. From the P1 to the latest Porsche Cayman, from all modern Ferraris to the F-type, from GT-R to GT3. Even the French have rediscovered their *joie de vivre*, as evinced by the Peugeot RCZ and a menu of spirited Renaults.

Yet in one key area we are a cursed generation. This is due to the almost total extinction of a breed of car that was once the favoured plaything of bright young folk. Ironically, it's a type of car well suited to today's driving environment, where fun should be generated by means other than speed and aggression; and where style, agility, a 'special' experience and affordability are all prized.

I refer, of course, to the British roadster. If we were to time-travel back to those happy days of deserted B-roads and no speed limits, we would find these quiet Elysian byways peppered with MGs and open-top Triumphs and – steered by a more serious breed of driver – Lotus Elans and big-engine Austin-Healeys.

Today, like the biplane and the giant beaver, they are all extinct, killed by poor quality (from leaking roofs to seeping sumps), fossilised engineering and no foresight. If we exclude minimalist Caterhams and Westfields, and other raw roadsters that revel in a certain intensity of self-flagellation, only one car maker serves up an affordable British-style roadster: Mazda.

The story of the first MX-5 has been told before, so I will not go into great detail – other than to tell you that the design was partly done by my old tennis partner Tom Matano, was inspired by classic British roadsters, that the Lotus Elan was the role model (a wise choice: the Elan was the best of them all, dynamically); and while MGs, Triumph TRs etc were by then mostly museum pieces, the MX-5 proved a great success. It quickly became the world's best-selling sports car.

Emboldened by Mazda's success, some car makers returned to the fold. Fiat launched its sweet and pretty Barchetta (little boat), Alfa Romeo reintroduced the Spider, hoping to ride a tide of roadster (and *Graduate*) nostalgia; Honda made the high-revving S2000; even Pontiac sold an inexpensive open-top two-seater, the Solstice. The Brits, their intellectual property impugned (nay, improved), briefly came back – remember the MGF? This was a typical Rover Group car: over-complicated, over budget and overwhelmed in the showroom by the MX-5.

For the new Mk4, Mazda focused on improving the best of all MX-5s: the first one. This was the smallest, the lightest, the most agile, the most driver focused. The Mk2 and

Mk3 iterations, though unmistakably members of the same noble family, were beefier beasts, more benumbed. Some of that old zestfulness was missing.

So what are the key ingredients that differentiate a 'British' roadster from other sporting cars, such as a hot hatch or a pricey Porsche? First, it must be light and small. The Mk4 MX-5 is 55mm shorter than the diminutive original and weighs just 975kg – that's 150kg less than the (recently deceased) Mini Roadster, a car which brazenly promoted its English roadster roots rather than, as the MX-5 does, subtly conveying the breed's charm. That's also 200kg lighter than a Fiesta ST.

Second, it must be rear-wheel drive. For ultimate balance, agility and steerability, nothing else will really do. (Ferrari, BMW, Porsche and Lotus – the long-term masters of driving enjoyment – all know this; Alfa Romeo is belatedly rediscovering it.)

Third, it should have two seats only, for more intimacy and less bulk. Plus it should be naturally aspirated, without the huff and puff of a frenzied turbo. Of course, you must rev the engine to generate thrills, but that's half the fun. Then there's the sensory wind-in-the-hair pleasure, accessible by the most deliciously easy (manual!) folding roof, one-handed and executed in seconds. Finally, a good 'British' roadster must be inexpensive. Happily, the entry level 1.5-litre MX-5 – all you need – is just over £18,000.

The British roadster's golden age was indeed long ago, in a care-

free driving environment far removed from today's strictures and constraints. Yet the latest MX-5 could well be the ultimate expression of this happy genre.

•@greenofrichmond

Former CAR editor Gavin is an undyingly passionate and knowledgeable car bloke whose opinion cuts the mustard at motoring's top table. He talks, they listen (occasionally)





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Mark Walton

THE INCURABLE ENTHUSIAST

'Pack six car journalists off to Mars, no problem. But mission control would turn the sound off after a bit'



IN PREPARATION FOR an eventual manned mission to Mars, NASA has just locked six volunteers in a dome on a barren lava field in Hawaii. They'll stay in this 11-metre-wide pod for a whole year, eating powdered cheese and probably drinking their own urine, to conduct 'isolation experiments'.

In other words, finding out if a real mission to Mars would end like a scene from a *Halloween* slasher movie.

This is the fourth stage in a project called HI-SEAS – Hawaii Space Exploration Analog and Simulation (awful name). The first two experiments lasted for four months, the third for eight months and now the guinea pigs are stuffed in the tent for a year. 'I think one of the lessons is that you really can't prevent interpersonal conflicts,' a NASA spokesperson said, as the team entered the dome and they threw away the key. 'It's going to happen over these long-duration missions, even with the very best people.'

Hilariously, the project website reported: 'The morning the crew entered the HI-SEAS dome, Carmel Johnston browsed a local music shop on a personal mission of her own. "I'm trying to find a ukulele so I can learn a new skill set while I'm in the dome," said Johnston. "I'm wanting to learn some of the Hawaiian culture and learn a new skill that I think would be really neat to know for later on in life too."

So, there's an 'interpersonal conflict' staring them all in the face from day one.

Anyway, despite the potential 'Smashed-Banjo-In-The-Chemical-Toilet' debacle, NASA tries to pick complementary personalities so they all get on in their long isolation. After lots of interviews and psychological tests, the international team for this latest experiment includes an astrobiologist, a physicist, a soil scientist, an aerospace engineer, an architect, and... a journalist. Yes, a journalist.

I bet he's not a car journalist.

In fact, 'he' is a she – Sheyna Gifford, a medical writer who contributes to NASA's educational websites, with degrees in neuroscience, biotechnology, science journalism and medicine. Wow, she sounds interesting, like being trapped in a lift with John

Simpson and that Brian Cox bloke from the telly. Generally speaking, journalists and writers lead diverse lives, and they have a wealth of anecdotes and insights they can share over that late-night powdered-cheese supper – lots of behind-the-scenes secrets and high-profile contacts they can gossip about. One glass of fermented urine and John Simpson would probably give you the President of Iran's mobile number.

Car journalists, however, are not interesting people. Not unless all the other scientists around the table – the biologist, the physicist, the aerospace engineer – all happen to be Nissan Skyline drivers, or members of the Renault 16 Owners Club. Just as the conversation turned to the genome of micro-

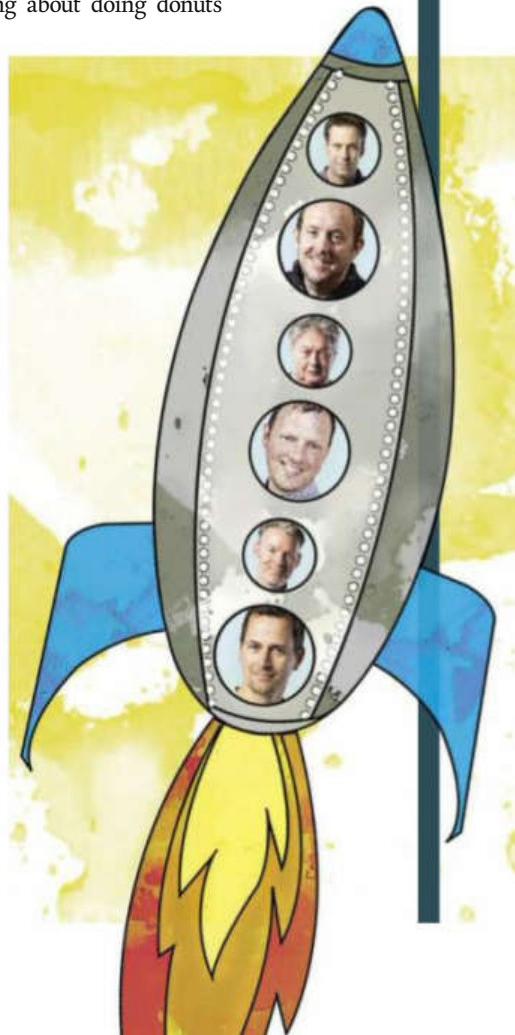
organisms, the car journalist would steer it back to Nürburgring lap times or oversteering the Ferrari 488. If you were a fly on the wall at the average car launch, there'd be the same three conversations going on, every time: there'd be a table of photographers talking about how they used to have a Canon then they switched to Nikon but they've recently gone back to Canon; there'd be a group of senior journalists on a table with a development engineer, talking about suspension and NVH; and there'd be a table of young road testers getting drunk and laughing about doing donuts in an M3 till all four tyres explode. No politics, current affairs, the arts or microbe genomes.

The behind-the-scenes gossip is pretty one-dimensional too. Let me think... I was once told that a senior car executive was a cocaine fiend... and years ago I had an embarrassing interview with Mark Webber, which lasted for 30 minutes but I ran out of things to say in ten. Well... fancy that... (long pause). I imagine the scientists listening to my anecdotes in silence before one of them asks: 'Who's Mark Webber?'

There's only one way it would work: if NASA made sure all six volunteers were car journalists, they'd all get on fine. Pack them off to Mars for three years, no problem. Mission Control would probably turn the sound off after a while, but the journalists themselves would never bore of the conversation. And within a week they'd be racing Mars Rovers round an improvised Baja track.

@markwalton_

Mark's original slant on car stuff has been lighting up these pages for decades. Even so, we'd rather not be locked in a pod with him for 12 months





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McLaren 650S LM
during its 24-hour
escape from Le Mans,
in our October issue

On #dieselgate

► VIA CAR ONLINE

The VW cheating scandal fills me with a little sadness, not least due to the apparent lack of integrity by a trusted brand. But I fear the motoring world will be a little duller when the dust has settled. Will a humiliated and chastised VW Board have the appetite for halo, loss-making cars, like Bugattis, that do nothing for their corporate environmental image and their CO₂ emission averages?

Cameron Pitchford

On #dieselgate 2

► VIA CAR ONLINE

A VW F1 car should help. Driven by Lance Armstrong, sponsored by Goldman Sachs, fuelled by BP. Perhaps Tony Blair could present the trophies at the Bahrain Grand Prix?

Philip Edwards

On #dieselgate 3

► VIA EMAIL

With regard to the VW crisis, the huge

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swing towards SUV style vehicles has been enabled as a result of supposed diesel frugality. However, more recently diesel has been increasingly seen as a bad option stuck between a downsized petrol or a hybrid whose only asset is its lower CO₂ output. It's a shame that it takes a scandal to hopefully kick two bad habits (diesel and SUVs), but I hope governments react to the stupidity of promoting this hateful stuff and that industry responds with vehicles that are fit for the purpose of getting small bipeds from A to B.

GBM

Auto bad parking

► VIA EMAIL

I read with interest the new BMW 7 series option for self parking whilst the driver is outside the car (CAR, October). It looks very interesting but I'm not sure how much this will be taken up by owners – unless it will park in the typical BMW way, ie, straddling the dividing line or at a jaunty angle dictated by the handbrake-turn parking manoeuvre. You also didn't mention the

Heroes or also-rans: which is the true McLaren?

► VIA EMAIL

While enjoying Ben Miller's breakneck 24-hour adventure in a McLaren 650S (CAR, October), I was struck by the relative fortunes of their road cars and race cars. The 650S appears to be sublime and, according to Chris Chilton in the same issue, the 675LT is a third as good again, yet on the F1 circuit the McLarens are a laughing stock, trailing home nearly last, with drivers publicly slating the team and sponsors pulling out in droves. How can one business be so brilliant on one hand and so inept on the other?

Kennedy Mahon

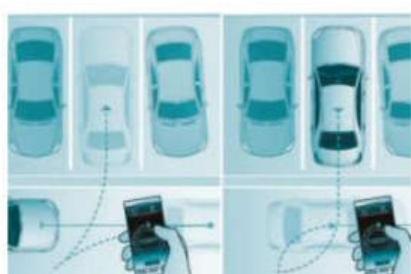
delete option for removing the indicators – oh I forgot, that's not a new option.

Stuart Aspin

Parking by phone

► VIA EMAIL

You have to admire the likes of BMW and Mercedes-Benz for pushing the envelope when it comes to the technology found in their high-end cars but I really do have to question if any of it is really necessary. Self parking? Why? Is an owner seriously going to rely on his smartphone to safely park his car for him? Call me old-fashioned but I'd prefer to park the car ▶



myself in half the time it takes to 'auto park' knowing that some gremlin isn't going to inadvertently send it careering into a wall or, even worse, kill someone. As if that weren't a big enough issue, how much are these things going to affect the reliability of cars? We all know that here in the UK a car can fail its MoT if safety systems aren't working properly. Have I just answered my own query regarding reliability though, as those fortunate enough to own such cars tend not to keep them long enough for them to become unreliable. Technology is sometimes way overrated.

Paul Bainbridge

On Porsche's Mission E

► VIA CAR ON LINE

At last, Porsche returns to air cooling—that should quell the pining purists, no?

Batty

Porsche goes electric – see p110

Land Rover, the first time

► VIA EMAIL

As a 12 year-old in 1956 I nagged my farmer uncle to teach me to drive. One day he drove his well used Series 1 Land Rover to the middle of a large featureless field, stopped and got out. As he walked away he said: 'If you run into one of my fences I'll kick your arse'. That was the day I learned to drive. So thanks for your feature on the Series 1 (CAR, September).

Owen Rye

Aston's muddled design

► VIA EMAIL

Aston Martin is probably the coolest brand on the automotive planet. But their styling direction is in shotgun blast mode – all over the shop with the sublime One-77, Vulcan and creative DBX (although surely



they will change the roofline, as it appears to be as practical as a shopping bag without a bottom). At Geneva earlier this year there was not one mainstream model on the stand; understandable perhaps with the lack of investment, but looking at the current Vanquish and the bland and understated DB10, I'm having panic attacks worrying about the DB11. According to recent renderings it has an unfortunate resemblance to the DB10, looking more reminiscent of a 1990s Hyundai. Praying for better.

Richard Lacey

The funk soul Boxster

► VIA EMAIL

Your feature comparing the new Audi TTS with a five-year-old 911 (CAR, October) was fascinating. Last year I went through a similar exercise, but in my case it was a new TT Roadster and an 18-month-old Boxster. I chose the latter. The TT is very impressive and, in a straight line, could leave



New 911 put through its paces in our October issue. An 'inevitable loss of character'?

911, Bentayga and the old git question

LETTER OF THE MONTH

LETTER OF THE MONTH

Your October issue made me feel like a right old git. First you had me lamenting the absolutely inevitable loss of character now undergone by the new 911 (Georg Kacher did his best to big it up, but you could tell it's not the same), then I found myself banging on about how Bentley has completely sold out by building that wretched Q7 clone (is it just me, or does it look every bit as ugly as the original concept which you so rightly pilloried?). Finally there was your excellent feature about the Eifel Rallye, which sent me into a reverie about the days when rallying was bold and exciting and, yes, dangerous too. The sight of Quattro, Stratos, 911, Sierra Cossie and Impreza leaping again made my heart do the same thing.

Is there no hope then? Well, yes. If McLaren and BMW are getting together again to build a supercar then perhaps, just perhaps, my world will keep on turning.

Marcus Boden

Letter of the month wins a free entry into the next supercar prize draw held by BOTB.com, worth £25!



my Boxster for dead. It's an outstanding piece of contemporary industrial design: fast, efficient, effective and in tune with the zeitgeist (although it's also beginning to look rather expensive, compared to some of its rivals.) What the TT lacks, though – and what swung my decision – is character, soul, and a sense of occasion. The Porsche has that, in spades.

Chris Waite

On the Bentley Bentayga

► VIA CAR ONLINE

The pictures suggest that it is a slight improvement on the concept. However, it is still wrong. Bentleys can be bulky but that should be balanced by a certain elegance. Ultimately this is just bulky. Personally I would never buy a car which has a name I have no idea how to pronounce and which has no obvious relationship to either the car or the brand. Not that any of this will put the target buyer off.

JLConsult



Gavin Green on his royal tour of the Bentley Bentayga engine line at Crewe, from our October issue



CAR ONLINE

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- 1) Frankfurt motor show: our coverage from the world's biggest show sent traffic soaring
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- 3) Our breaking news coverage of the VW emissions crisis proved popular during #dieselgate
- 4) Jaguar F-Pace world debut: we introduced Jag's first crossover at Frankfurt
- 5) Our first drive of the blink-and-you'll-miss-it Audi A4 compact exec

THE CAR POLL

After VW #dieselgate, will your next car be diesel?



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Our own Prince Philip

► VIA EMAIL

Ref the photograph on page 79 (CAR, October) of the bloke doing the Prince Philip impression (*that's our Gavin Green! – ed*). Does the paperwork on the engine read 'CO₂ emissions reduced by 10%, honest!?'?

Peter Turner

Mini One, or Mini won?

► VIA EMAIL

The excellent test of the top four small hot hatches (CAR, October) showed just how good the 2006 Cooper S Works GP was. Just 10bhp short of the latest Cooper Works, plenty more than the other three cars, yet a massive 205kg lighter than the winning Mini! I am on my third first-gen GP and it's a stunning car.

Ian Neal

When speed is the ticket

► VIA EMAIL

Round about now I guess the forces of political correctness will be circling around you guys after you attempted to v-max your long-term Lamborghini Huracan on an unrestricted German autobahn (CAR, October). Generally the outraged majority will be unfazed by the legality of what you did, and will perhaps point to your poignant nod to Bernd Rosemeyer as proof positive that speed-hunting is dangerous. Of course it's dangerous – humanity feeds on danger. I don't want to trivialise – obviously every road fatality is a tragedy – but equally I'm glad that CAR has not quite (yet) fallen into the swamp of blandness that threatens to engulf us all.

Nat Turnbull

Reprising Russell Bulgin

► VIA TWITTER

One of the best things about @CARmagazine's Car+ is the Russell Bulgin back-catalogue. He was an incredible writer.

Peter Anderson

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Your month

The place where you let us peek into your weird and wonderful automotive lives

1

BARBADOS SUBMARINE

After enjoying the crazy Barbados roads in our hired yellow Kia Picanto and being overtaken by the musical Reggae Reggae buses, we went on a submarine trip. Don't worry, another turtle will be along in a minute, but there will only ever be one September 2015 issue of CAR!

ALEX SHARPE

2

BABY DRIVES MY CAR

Little Rupert checking what all the fuss is with these beautiful pieces of metal that daddy won't stop obsessing about. Where better place to start than CAR? He did eat a small section of page 79 shortly after this picture was taken – think he fancies an R8!

RICHARD BLACKWELL

3

MASERATI FOR LUNCH

My fellow Maserati owners parked up outside our lunch stop during a drive around the New Forest after a brilliant day at the Goodwood Revival the day before.

DAVID WELLS

4

NORMAL BEHAVIOUR

What better way to spend a wet afternoon on the Norfolk Broads than making your own classified Top Trumps?

GREG MILES

5

FOCUS IN USA

Three friends packed into a Ford Focus, driving from coast to coast in the US. We drove for over 130 hours, racking up more than 7600 miles in three weeks. It was one of the most exciting, terrifying, and rewarding drives of my life.

DAVID GURR

6

NICE PAIR OF BRISTOLS

Spotted just outside Reims, these two beautiful cars – is there a collective noun for two Bristols without sounding like a character from a Carry On film?

ALAN CONRAD

7

PORSCHE 918 IN ITALY

Just returned from a holiday in Italy and while in Saint Moritz spotted this fabulous Porsche 918 Spyder parked outside a hotel. I was one of about six people photographing it. I doubt we'll ever see another one. Made my holiday!

DAVE BEASLEY

8

ROLLER PARK

Not your average multi-storey car park! This is at Pebble Beach during Monterey Car Week.

MARTIN ROWE

9

INCA EDITION

There are no roads to Macchu Picchu town so it's back to Inca by Shanks' pony. Good excuse to remind myself what four wheels look like on top of a mountain.

JOHN HOBSON

1

OUR WINNER




2



4



8



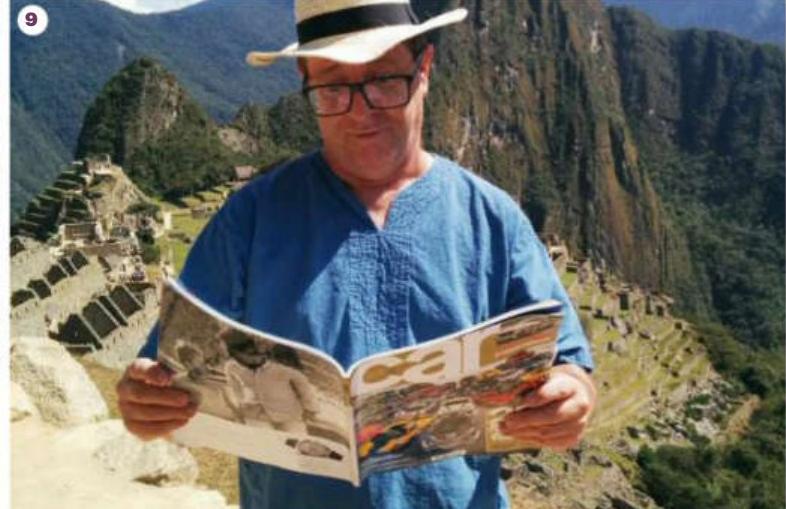
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7



9



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TEN GOOD MEN

So, Alfa poaches the genius behind Ferrari's 458 and tells him: 'Forget the rulebook – just recruit a team and build a truly great car'. We step inside the miracle of Alfa's M3

AND GIULIA



Words Mark Walton | Photography Richard Pardon



EVERYTHING SOUNDS better in Italian. ‘Ho bisogno di svuotare la mia fossa biologica’ sounds like poetry, but it actually means ‘I need to empty my septic tank’. Say ‘Dov’è il negozio di scarpe’ and you sound like you’re ordering a pizza in a fancy restaurant, when in fact you’re asking directions to the nearest shoe shop. And ‘Squadra Puzzola’ might sound like a new Formula 1 team, but it’s actually an approximation of ‘Skunk Works’. Which is a pretty ugly name in English, though it’s a cool concept: don’t we all want

our cars to be hot-rodded by a ‘skunk works’? A small team of dedicated developers, working in top secret, all black-ops and underground? Ken Block probably has a skunk works building his next drift car right now; Toyota is not using a skunk works for the next Auris.

The name originates from the US aerospace company, Lockheed Martin. During the latter years of World War II, the US Military urgently needed a new fighter plane, to counter the rise of the Nazi jet planes. Realising it would take years to push a new design through the usual channels, it asked Lockheed to ignore the rules and conventions of military procurement, and just get it done. Lockheed put a young engineer called Kelly Johnson in charge of a small, hand-picked team, and gave him 150 days to deliver a new aircraft. Because the factories were all flat-out with the war effort, Johnson’s team was housed in a former circus tent, round the back of a manufacturing plant. The tent smelled bad, and the top secret project became known as the ‘Skunk Works’. Johnson delivered the XP-80 Shooting Star in just 143 days – it was America’s first jet fighter.



Quadrifoglio,
or Cloverleaf, is
Giulia’s launch
spec. 191mph and
0-62 in 3.9sec

Cool story. Now hold everything you’ve just read in your head, and think about Alfa Romeo. Of course, it’s perfect isn’t it? A once-great sporting brand, locked in a gigantic corporation, stifled by the bureaucracy, the platform sharing, the economies of scale, the god-awful front-wheel drive... Alfa Romeo has been needing to think outside the usual channels for a generation; to ignore the committees and accountants and the Fiat Doblo parts bin, and create its own XP-80 Shooting Star.

Trouble is, this kind of thing never happens within a big corporation – you need to be a TVR or an Ariel to take risks like that. But this time – miraculously! – the CEO of Fiat Chrysler Automobiles (FCA), Sergio Marchionne, did exactly that, and you’re looking at the result. It’s an incredible story. If this car is anywhere near as good to drive as it looks, the new Alfa Giulia will go down in history... and the *Squadra Puzzola* will become legend.

LORENZO RAMACIOTTI STROLLS into the huge white room, looking relaxed and cheerful. We’re inside Fiat’s sprawling Mirafiori factory in Turin, visiting the *Centro Stile* design studios for a first, close-up look at the new Alfa Romeo Giulia. And when I say ‘first’, I mean ‘world first’ – after its unveiling in Frankfurt, CAR is the first magazine anywhere in the world to enjoy a private one-to-one with the car. And now Ramaciotti’s popped in for a chat.

This man is one of the most significant designers of the last 40 years, yet he’s never been a celebrity stylist. He’s like your favourite uncle – gentle, self-effacing, with a warm twinkle in his eye. Incredible to think, as I talk to him, that ‘Uncle Lorenzo’ here joined Pininfarina in 1973, rose to be the head of that most famous of design studios, and was responsible for cars such as the Ferrari 456, the 550 and the Enzo, plus the Peugeot 406 Coupe and the gorgeous Maserati Birdcage concept from 2005. ▶



We’re less keen on
the lights – not as
cool as the 159’s.
‘But it’s not a 159
successor!’



If this car is anywhere near as good to drive as it looks, the *Squadra Puzzola* will become legend

The Birdcage was one of Ramaciotti's last projects before he stepped down (buying a Ferrari 430 as a retirement gift to himself). He probably thought he was going to take it easy, do some gardening and write his memoirs, but then in 2007 Sergio Marchionne called him and asked him to oversee the designs of FCA's growing portfolio of brands – Fiat, Ferrari, Maserati, Alfa Romeo, Lancia, Dodge, Chrysler and Jeep. So Ramaciotti came back, and (amongst other things) managed the team that did the Maserati Alfieri concept and the Alfa 4C, before retiring again. But this second retirement is still a working retirement – he hands me his business card which says 'Special Advisor to the CEO'. Wow, this guy really doesn't know how to stop.

So does that mean he's still hands on, I ask? Does he still draw, for example? (I'm itching to hand him my notebook and pen for a signed sketch, which I can then frame and keep forever until I sell it on eBay). 'No, I don't draw any longer,' he says, smiling (I try to hide my emoji sad face). 'My skills are more in... direction,' he explains carefully. 'In decision making. And the tutoring of people with me.'

And talking – Ramaciotti is very good at talking. 'I am "Chief Designer Emeritus", like the Pope,' he adds, chuckling. 'But I still like to speak about cars and car design.'

Which is an invitation to talk if ever I heard one, so I ask Ramaciotto about the *Squadra Puzzola* that designed the new Alfa Giulia. 'We have been working for some time to come out with a new saloon for Alfa Romeo,' he begins, 'using different layouts. And it was very hard, because we had to 'cheat' to make the proportions right for the car.'

By 'cheat', he means making a front-wheel-drive car look like a rear-wheel-drive car. 'The root of Italian car design is

Lorenzo
Ramaciotti
with our man
Walton. 'I am
"Chief Designer
Emeritus", like
the Pope!'



Krief assembled a crack squad of ten people in a secret location. 'I called them one by one, like *Mission Impossible*'

in proportion,' Ramaciotti goes on. 'It's the way a car sits on the road, the ratio of the body to the wheels, the position of the cabin, the size of the overhangs. If the proportions are not right, you start to cheat to make them look right, and that's not the best way to do it.'

Then he says something only a charming and witty Italian uncle could get away with: 'When you dress a woman, if the woman is fat and low, it will not work. You can put vertical stripes to make her look slimmer, but still...'

So – there they are, the whole Fiat-Alfa-FCA team, spending years trying to turn a Doblo-parts-bin, front-drive Alfa into a proper sports saloon, and they're going round in circles and getting nowhere. Which is when Marchionne steps in with his Lockheed Martin-inspired brainwave. 'The CEO (Ramaciotti always calls Marchionne 'the CEO') wanted to get back to the roots of Alfa, and start with a white sheet of paper. And when I say 'white sheet of paper', it's not just the piece of paper, but the approach you have to putting things on the paper. He wanted people to feel free in proposing and thinking.'

So the *Squadra Puzzola* was born, in secret, and at its head – my god, I can't believe I'm writing this, it's like a script out of a car enthusiast's action movie – is none other than Philippe Krief, the Ferrari chassis engineer responsible for the Ferrari 458 Speciale. I feel I need to add a few exclamation marks in now, just for effect: !!!!!!!

Krief is told to assemble a crack squad of just ten people, to hide in a secret location and create the perfect Alfa sports saloon for the 21st century. Talking to CAR as Giulia was first unveiled back in June, Krief described the process: 'I called them one by one, like *Mission Impossible*: you choose your guy, you call – okay, they come! I called one guy in Australia, who had worked with me and quit the company. Three years later he's working in Australia for another car maker, I call him and say, "What do you think?" And he says "I'm your man".'

Soon, this special Ferrari-inspired team assembles in Italy to discuss their bank heist – sorry, engineering project; they're given a blank sheet of paper and told to develop the perfect Alfa, ▶



Project leader Philippe Krief conjured Giulia from scratch, including all-new 2.9-litre twin-turbo V6



THE POWERTRAIN STORY

'The V6 is a ground-up build,' says project leader Philippe Krief. 'Twin-turbo, 90-degree. What was important for us was the feeling, it's not necessarily the amount of torque. When you accelerate, you can have all the torque suddenly then nothing, or you can have torque which is increasing, increasing, increasing: we tuned it to have this feeling.' The launch car has a manual six-speed 'box, but a bespoke seven-speed dual-clutch unit is coming soon.



THE STEERING STORY

Krief's mission was to bring the precision and directness of the Ferrari 458's helm to the Giulia's electric power steering. 'It's exactly the same kind of stuff we wanted, this kind of feeling,' he says. 'We are even lower than Ferrari for the steering ratio, below 12:1.

We worked a lot on the feeling.'

THE WEIGHT STORY

The team worked to a target weight of 1500kg for the Cloverleaf, and used carbon and some aluminium to achieve that. But most of the body is steel? 'Aluminium wasn't that efficient in terms of weight saving,' says Krief. 'Even the new Jaguar XE V6 is heavier. It's not about aluminium for aluminium's sake, it's all about the weight.'

THE MISSION STORY

'Doing a car in two years is not possible – you ask any car maker,' says Krief. 'The standard says four. Marchionne said the only way is to be completely outside of the world, and try to think differently.' Krief recruited his ten men, who worked collaboratively in an 'open space', with Marchionne dropping in once a month. The total Giulia team is 600 strong, which is about 20% of the numbers Fiat would deploy. 'No negative voices – we just had to do it,' says Krief.

SPEC

ALFA ROMEO GIULIA QUADRIFOGLIO

Engine 2.9-litre twin-turbo V6
Transmission Six-speed manual, rear-wheel drive
Power 503bhp **Torque** 443lb ft
Performance 3.9sec 0-62mph, 191mph
Kerbweight 1524kg
Price TBC but expect it to match the BMW M3
On Sale Autumn 2016

THE AERODYNAMIC STORY

Giulia is designed with 'natural downforce' – a product of design, proportions and a wide track. The rear spoiler is fixed but active aero is deployed via the front splitter by what Alfa calls Chassis Domain Control. 'There are two electric actuators linked to the brain that understand if you're in a curve or a straight line, in an understeer or oversteer situation, and in respect of that decide to move the splitter,' says Krief.

Electronic dampers and a multi-link axle improve stability.



The 5 Alfas that made Giulia a star

Lorenzo Ramaciotti admitted his design team spent a lot of time with the Alfa Museum's vast car collection. He reveals the five cars that most inspired the Giulia project



1938 Alfa 8C Le Mans Special

This one-off racer didn't win the 1938 Le Mans as intended, but with its streamlined body by Touring it's one of the crown jewels of the Alfa Museum. 'Clean, simple, beautiful,' says Ramaciotti.



1957 Giulietta SS

Inspired by Bertone's wild BAT concepts, the Sprint Speciale was launched in 1957. 'The cabin treatment is very round,' says Ramaciotti approvingly. 'The shape is very subtle.'



1964 Alfa Canguro concept

This one-off prototype – now in a private collection in Japan – was designed by a young Giorgetto Giugiaro while he was at Bertone. 'He is a master at surfacing,' says Ramaciotti.



1965 TZ2 Zagato

Built by Zagato in 1965, the low-drag TZ2 is a candidate for the most beautiful car ever. Tellingly, Ramaciotti actually owns an example of the TZ2's smaller cousin – a 1956 Abarth Zagato 750 'double bubble'.



1997 Alfa 156 saloon

The 156 still looks good almost 20 years after launch. 'It opened a new concept in the family sedan, because it was very sporty,' says Ramaciotti. 'It was simple, with a rounded, softer, muscular shape.'

and ex-Pininfarina chief Lorenzo Ramaciotti is in charge of the styling. Cue the theme music to *The A Team* and get me Hollywood on the phone.

TWO AND A half years later, we're in a big empty room in Turin, enjoying the product of the Squadra's work. And I can tell you, it looks incredible, as soon as you see it: low, wide, muscular and purposeful. This is a brand new platform from the ground up, and that all-important, rear-wheel-drive configuration is hard-baked into the design: the front wheels are pushed forwards, the wheelbase stretched back (it's the longest wheelbase in its class, apparently), and the whole thing appears to be swept back on its haunches, like a hill-top tree that's been shaped by the wind. The stance, the proportions – it just looks instinctively 'right' as soon as you clap your eyes on it.

'Having this freedom, of a new platform, and starting with a white sheet of paper, we were so lucky to work with the perfect proportions,' Ramaciotti says, as we admire the car. 'We could have a car with a long wheelbase, short overhangs, cabin to the rear – everything was fitting, and the ideas that were not working so well on previous efforts were working beautifully on this one.'

Blessed with this dream scenario, Ramaciotti's team did not disappoint. The Giulia is a handsome car, lean but pumped up, bulging like a bodybuilder's biceps. It's curvaceous too, and apart from the scoop down the flanks, there isn't any really defining line on the car. 'It's a car you must see in the flesh,' Ramaciotti agrees. 'It's very three-dimensional, it doesn't have a main character line on which the light can play – you have to understand the curvature of the surfaces on the real thing. Italian design is about simplicity and purity,' he goes on. 'It's not a matter of how many lines you draw, the sculpture of the surface should speak by itself. The surfaces must be richly developed in a way that shines under the light'.

It's wonderful to spend time with Ramaciotti as he talks this way, and he can't help getting enthusiastic about it, despite spending months already looking at it. He walks up to the rear haunches of the Giulia, and ▶

'Having this freedom, of starting with a white sheet of paper, we were so lucky to work with perfect proportions'



When Philippe Krief came over from Ferrari, he brought his bright red starter button with him. A beacon in a sea of black





↑ Stubby gearstick, for some reason, has a knob the size of an upturned cereal bowl. Carbon-backed race seats are optional

← The 19in wheels are your only choice. The arches were cut specifically for them. 'They look perfect!'



Carbon bonnet, carbon roof... the longest wheelbase in its class, yet just 1524kg

his hand hovers over the C-pillar as it melts into the back window and rear deck. 'Here!' he says, as he strokes the invisible air above the car. 'We are very proud of this area. When you see the car in the three-quarter, the cabin becomes very small, it changes perspective, gives an unexpected view.'

That rear three-quarter also shows off the rear haunches and the dragster-fat rear tyres. This 'Quadrifoglio' example – the unofficial 'launch spec' – sits on standard 19-inch rims, and there will be no 22-inch option. The design was conceived around these wheels, the arches were cut for them, and they look perfect. We move round to the front and I tentatively suggest the headlights are the most disappointing aspect of the car. They look generic – there's a little bit of BMW in there, a bit of Jaguar... I loved the old 159's triple hooded lights, which looked so distinctive and menacing – why not keep those?

'The 8C and 4C had round lenses,' Ramaciotti reminds me. 'But we didn't want to reference any specific car in the past – this is not a successor to the 159, we wanted to start from scratch. We wanted to achieve a car that looked low and wide.'

We talk about the vents in the bonnet (all the vents are working) and then take a look at the engine. The underside of the bonnet is bare carbon – another reminder that this is a serious performance car – and beneath it is the new, all-aluminium 2.9-litre twin-turbo V6. Putting out 503bhp, the Giulia Quadrifoglio has a top speed of 191mph and a 0-62 time of just 3.9 seconds. And now I'm feeling I CANNOT WAIT TO DRIVE THIS CAR.

So, a carbon bonnet, carbon roof and a trick carbon propshaft, and doors and wings made of aluminium. I climb inside and find (optional) carbon-backed race seats. I settle into the hip-hugging driver's seat and adjust the thick-rimmed steering wheel. Inside, the elegant simplicity continues – apart from the Ferrari-inspired starter button on the wheel, it's all black in here, with subtle brushed aluminium details. 'Simplicity does not have to mean it is

poor,' Ramaciotti explains. 'It should be simple but fulfilling.' Yes master, I understand now – Ramaciotti is fast becoming my Yoda.

And the steering – which our ex-458 Speciale man Krief promises is razor sharp and full of feel – is just two turns lock-to-lock. Everything, everything, EVERYTHING – every little detail is just right, and full of promise.

It all speaks volumes about a car that was designed by a small team, and not a big committee. Take the rear number plate – not a striking detail to you and me, but to the *Squadra Puzolla*, they sweated it over its location. 'Since 20 years, Alfa has the licence plate on the rear bumper,' says Ramaciotti. 'But the Giulia team wanted the car to be as compact as possible. To have the licence plate in the bumper makes the car longer, because of the packaging for everything in the bumper area. So to keep the car as short as possible, we had to raise the licence plate to the hood. For us, this was a radical decision,' he says with emphasis.

Really? It's a glimpse into a world that struggled to reinvent Alfa for all those years – if moving a number plate north by a few inches caused such consternation, no wonder the committees and vested interests couldn't re-invent the brand. And what a brand – Alfa Romeo won Le Mans four times in the 1930s; it won the Formula 1 World Championship twice in 1950 and '51; and it won the World Sportscar Championship twice in the 1970s. Marchionne's plan was to 'shake the structure of Alfa', as Ramaciotti puts it, and bring back some of that glory. The result – the engine, the drive, the interior, all those little details – feels like a 'thoroughbred'. An old-fashioned word, perhaps, but a fitting one for this car and that historic, evocative badge.

It has to be great to drive. Dear god, please. For all sorts of reasons, and with all sorts of meanings, it just has to be great to drive.

Alfa's 7 steps to recovery

Marchionne pledges 7 cars by 2019. That's one busy schedule...

Giulia saloon (2016)

Yes, cooking models running 2.0 petrol turbos and 2.2 diesels will flesh out the range, when production starts next spring/summer



Midsize SUV (2016)

Audi Q5 rival, codenamed 949, vital to ride the SUV wave: all-wheel drive and on sale late next year

Compact SUV (2017)

No codename yet: does that indicate Giulia platform can't shrink to fit planned X1 rival?

Alfetta saloon (2017)

Project 961 is Alfa's 5-series rival, with rear- and all-wheel drive, four-pot and V6 engines

Giulia coupe (2018)

While a Giulia estate is a no-go, a two-door 4-series fighter is planned for early 2018

Duetto Spider (2018)

An Alfa Spider based on the MX-5 has now become a Fiat roadster; Alfa will engineer its own drop-top using Giulia bits

Giulietta Mk2 (2019)

Planned as a rwd hatch, it could switch to front-drive. A replacement Mito, based on the next 500X, may follow.

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SPORTS
CAR
GIANT
TEST
2015

Supreme beings

Prodigiously talented and so flattering your mum could drive them like Mansell, the sports car class of 2015 is riven with quality. Too close to crown a winner? Of course not

Words CJ Hubbard, Ben Barry & Gavin Green **Photography** John Wycherley & Mark Riccioni



The pre-fight weigh-in

By CJ Hubbard

THE SUN IS shining. Only kidding; it's chucking it down, the gods having a particularly acute sense of humour when it comes to significant Giant Tests. Fortunately, we've come prepared. Not only is every car here finished in thermonuclear shades – the bloody red of the prancing horse being as subtle as it gets – with a cylinder count of 64 and a combined output of 4493bhp, we've enough power to generate our own microclimate. Certainly, we won't have any trouble keeping warm. Welcome to the 2015 Sports Car Giant Test.

You'd be forgiven for thinking we've finally waved farewell to anything approaching reality, such is the rarefied atmosphere of performance and price this assembled machinery occupies. But the whole point of the SCGT is to assess the

year's best driver's cars, surely? 2015's crop is so spectacular that we had to be selective, and there are certainly no 'maybes' among these giants. Including the Corvette Z06. America attempts to take on Europe, again – but the Z06 boasts a race-developed chassis and a 650bhp supercharged V8 which, in noise and ferocity, borders on terrifying.

Talking of scary, have you seen the Aventador SV? Over 2m wide, it looks pointier than the peak of punk and has the biggest, most powerful engine here – by some margin. Yet it feels surprisingly at home on a B-road. The madly proportioned Mercedes-AMG GTS pulls off a similar trick, deft and controlled despite a visual impression that suggests it's all engine... though that biturbo V8 is quite the storyteller.

Closest pair of actual rivals on test are the Porsche Cayman GT4 and Lotus Evora 400. Both are mid-engined coupes, building on exceptionally talented preceding models; but it's still a shock that the Lotus costs more – and that Porsche has actually gifted the Cayman with more advanced suspension than a standard 911 GT3. Question is, has the

Mercedes-AMG GTS £110,500

Son of SLS is gorgeous on the outside, awkward on the inside – but all ergonomic concerns melt away as soon as you fire up that irascibly responsive twin-turbo V8. Oh Lord, what an engine.

Lotus Evora 400 £72,000

Reworked Evora offers easier cockpit access together with a thumping 400bhp. Super-sweet chassis is a serious charmer, but can that interior really justify more money than a Cayman GT4?

Porsche Cayman GT4 £64,451

The Cayman that doesn't just shout 'Grandad!' behind the 911's back, it also spray paints it on the old boy's garage door before legging it with a bunch of GT3 parts. So special for the money.

Corvette Z06 (with Z07 pack) £112,910

2015 Z06 is the most potent and poised Corvette we've ever tested. Z07 pack adds carbon brakes, cut-slick tyres and aero. Rain-ready non-Z07 manual much cheaper at £87,860...

Lamborghini Aventador SV £321,723

Lamborghini's timeless V12 eschews 21st century hybrid or turbo assistance to crank out 740bhp the old-fashioned way. Lob in adaptive dampers and crazy aero and sparks will fly. The best driver's Lamborghini ever? Possibly.





2015's crop is so spectacular that we had to be selective; there are certainly no 'maybes' here

GT4 bitten off more 911 than it can chew in this instance – or will costing more than double count against the competing GT3 RS? The 493bhp 4.0-litre six squatting over the rear wheels will certainly have something to say, and nothing else here looks as much like a starting grid refugee. What are you betting on: mid-engined manual or rear-engined PDK?

Yes, we know, two Porsches – talk about loading the deck. But 2015 is also the year Ferrari finally succumbed to forced-induction pressure. The 488 GTB is a stunningly capable, ultra-modern supercar; a machine with which Maranello is attempting to out-McLaren Woking by blending high-tech turbocharging with Italian passion.

The 675LT doesn't look worried, though. Almost as light as the Lotus and packing a fulsome 666bhp, it's 33% enhanced over the 650S. There's also a very un-Ron hint of swagger about that back end. Seriously predatory.

Pick a winner from that little lot. Over to you, Ben Barry... ▶

**Porsche
911 GT3 RS**
£131,296

The most extreme current 911. With its fast-shifting PDK gearbox, screaming 4.0-litre straight six – last bastion of the non-turbo 911? – rear-wheel steering and rollcage, the RS really is a road-legal GT racer.

**Ferrari
488 GTB**
£183,974

Controversially turbocharged 458 replacement may have lost a little elegance and purity, but no one can dispute the enormous potential of its Eurofighter-style performance. Should travelling this fast be this easy?

**McLaren
675LT**
£259,500

The devil's own McLaren. Longtail LT justifies its name with increased active rear aero – just one of the changes to a car that's 33% different to its 650S stablemate.

Use all the flat-six's guts and
there's an intensity to the
GT4's speed that makes you
grip the wheel hard



Two Porsches in
the same test? A
ridiculous notion,
until you drive them
drive them

Battle royale

By Ben Barry

T'S GONE 9PM when I grope around in the CAR key box, finding only a yellow fob and a note to meet the others in a bar in north Wales. AMG, Ferrari, McLaren... all have struck out for Britain's left-hand side.

But this is hardly the scraps from a late-night Hertz desk: I'm driving the Porsche Cayman GT4; a £64.5k piece of heaven, and a crucial wedge of context.

You'll probably know the GT4 as the first Cayman to out-punch 911. It uses the Carrera S's just-killed flat-six, detuned to 380bhp, but still 15bhp clear of even the base Carrera's new flat-six turbo. Extra oomph, a fettling by Porsche's greatest GT minds... the mid-engined Cayman is finally off the leash.

There's more going on here than just extra power, though. The changes compared with even the GTS, previously the range-topping Cayman, are immediate and striking: the clutch has a heavier physicality; the stubby gear lever the truncated throw of an arcade joystick; the brake pedal less give than a Hungarian border. Everything feels taut, mechanical and purposeful.

Headlights flick over hedgerows as I cut cross-country, road noise filling the cabin like AM radio static, the engine's warm, bass-heavy howl building at lower revs as I wait for the oil to thin with temperature. When you do use all the flat-six's guts, there's a kick past 5000rpm that elevates the GT4 well above its mid-engined siblings, an intensity of speed that makes you grip that alcantara wheel rim hard and focus every bit of mental capacity. The GT4 is genuinely quick and makes you wonder – and here's that context – why you'd need another 200bhp.

Furtive fumbles through damp roundabouts reveal the chassis to be sweetly balanced, if too competent to slide purely with throttle prods. I start to feel comfortable with the tread-blocks slipping, tapping into this car's deeply satisfying adjustability – beats a six-pack of Red Bull when you're fighting for concentration.

The bar's closed, the others long retired when I arrive after midnight. But I can't sleep after that buzz, wondering if costlier rivals can really answer the Cayman's brilliance.

I'm woken next morning by the whoosh of lorries dispersing standing water and seven blokes firing V8s, sixes and a V12, all droning, wavering, vaguely menacing idles that obviate my alarm clock. ▶

SECOND OPINION

GT4 or 911 GT3 RS?

The GT4's 3.8 elevates the Cayman to a higher plane, from quick to truly fast, while the chassis, so compact and wieldy, delivers such poise, agility and control that the little mid-engined Porsche still feels like it could handle more. Yes the gearing's too long and yes there's a refinement trade-off for the GT4's uncompromising suspension, but it takes but five miles of the Cayman's joyous predictability and interactivity to banish all doubt: this is one of the great Porsches.

But the GT3 RS is greater still. Its defining brilliance is the raw speed and drama of a racer in a road car you'd happily drive to Monaco tomorrow. The PDK 'box will slide through its ratios while you sip a Starbucks, just as it'll seamlessly shift up as you screw the astonishing motor to its near-9000rpm redline. The ride is incomprehensibly compliant. Road noise is well suppressed. And yet the steering shimmers with feel and feedback, as you'd expect of a GT3 car, a product of Andreas Preuninger's GT team (as is the GT4) bejewelled with details like a magnesium roof, titanium exhaust and bespoke induction system.

On the road it feels like the labour of love it is: obsessively honed, alive, exhilarating.

BEN MILLER



CJ's crouched frowning at the Corvette's Michelin Cup 2s like he's struggling to decode a child's fractured monologue. The tyres are part of this Z06's track-focused Z07 pack, derived from the same gene pool as the Cayman's, only someone appears to have transferred the same tread to a far wider hunk of rubber, leaving vast slick tranches on the outer halves. I don't want to headbutt a wall 90 seconds out of Betws-y-Coed, so I slip into the Mercedes-AMG GTS; yep, a 503bhp V8 appears friendliest today.

With the Cayman still fresh in my mind, the first few miles in the GTS are anti-climactic: the steering numb, the whole car desensitised. But Gavin drove it last night, loves it, says I need more seat-time.

He's right. You can miss the Merc's completeness on tests like these, when we're chasing a rush, not always thinking about living with the things. Pick one car here to do everything and the Merc wins. It's comfortable and refined, the infotainment excellent. Shame the centre console is so vast, its tiny gear selector so far back that you fumble at it like an ape scratching armpits.

On the plus side, the configurable buttons in that centre console actually serve a purpose: the AMG rides with cushy

Communicative, balanced AMG loves to dance



compliance – 'it just absorbs bumps then kills any body motion dead,' notes CJ – but the softest suspension setting is too boaty when you're pushing on, so you press Sport, quelling roll without destroying the ride. The exhaust note's too subdued for a car whose luminous yellow schnozz arrives ten minutes before you, but another button unleashes a muscle-car wobbling at low revs and thunderous farts during high-rpm gear swaps. Much better.

Just because the AMG shrugs off daily duties doesn't mean it can't entertain. The V8 is so far behind the front axle it's almost in the passenger seat, so even though you're riding the rear axle like Ben Hur, the AMG's eagerness to change direction feels centred around your kneecaps. You learn to trust that slightly aloof steering, knowing you can twist it with a wrist-flick. Lean on the front end, work the mighty brakes and just nail each apex at daft speeds. Excellent engine too – serious speed, great response, generous torque – and while the gearbox isn't as sharp as the best, it's good enough. It doesn't baulk at high-rev shifts to second like AMGs once did, and the Sport+ setting chuck's the right gear into the mix bang on cue.

A twin-turbo V8 sounds a handful in a deluge, but the AMG's chassis is so accomplished that killing the stability system is no deathwish: the rear rubber breaks away in completely linear fashion.

Not so the V8 supercharged Corvette. You sit low in a cabin of surprisingly sophisticated finesse – even AFC is impressed, a man whose colouring-in is a match for his deft penmanship – a plaque on the dash warning that there's 650 horsepower and 650lb ft of torque lurking under that long right pedal. There's also a grab handle that swoops down from the instrument binnacle to the passenger side, but handily it's also easy to reach from the driver's seat with your eyes closed... And you will get scared: prodding the throttle hard is like yanking on a lion's tonsils, or pulling open a trapdoor to oblivion.

The Corvette is not lacking polish. Its steering is light and feelsome, the chassis well controlled, and there's an agility that confounds initial expectations. But those tyres and that massive torque-rush ▶

SECOND OPINION

AMG GTS or Corvette Z06?

Not so much a fish out of water as a man overboard, the roads of north Wales could hardly have suited the Corvette less. Very wide, very left-hand drive and on semi-slick tyres (part of the Z07 package, which also brings added aero), its keys were the least fought over. Shame, because in between bouts of heart-stopping terror it is an extraordinary, addictive thing to drive.

Quite apart from its sheer pace – you could restrict the throttle pedal's travel by 50% and it would still feel monstrously fast – the Corvette is dynamically impressive, with mustard-keen turn-in, sophisticated damping and feelsome brakes. Bottom in the voting,

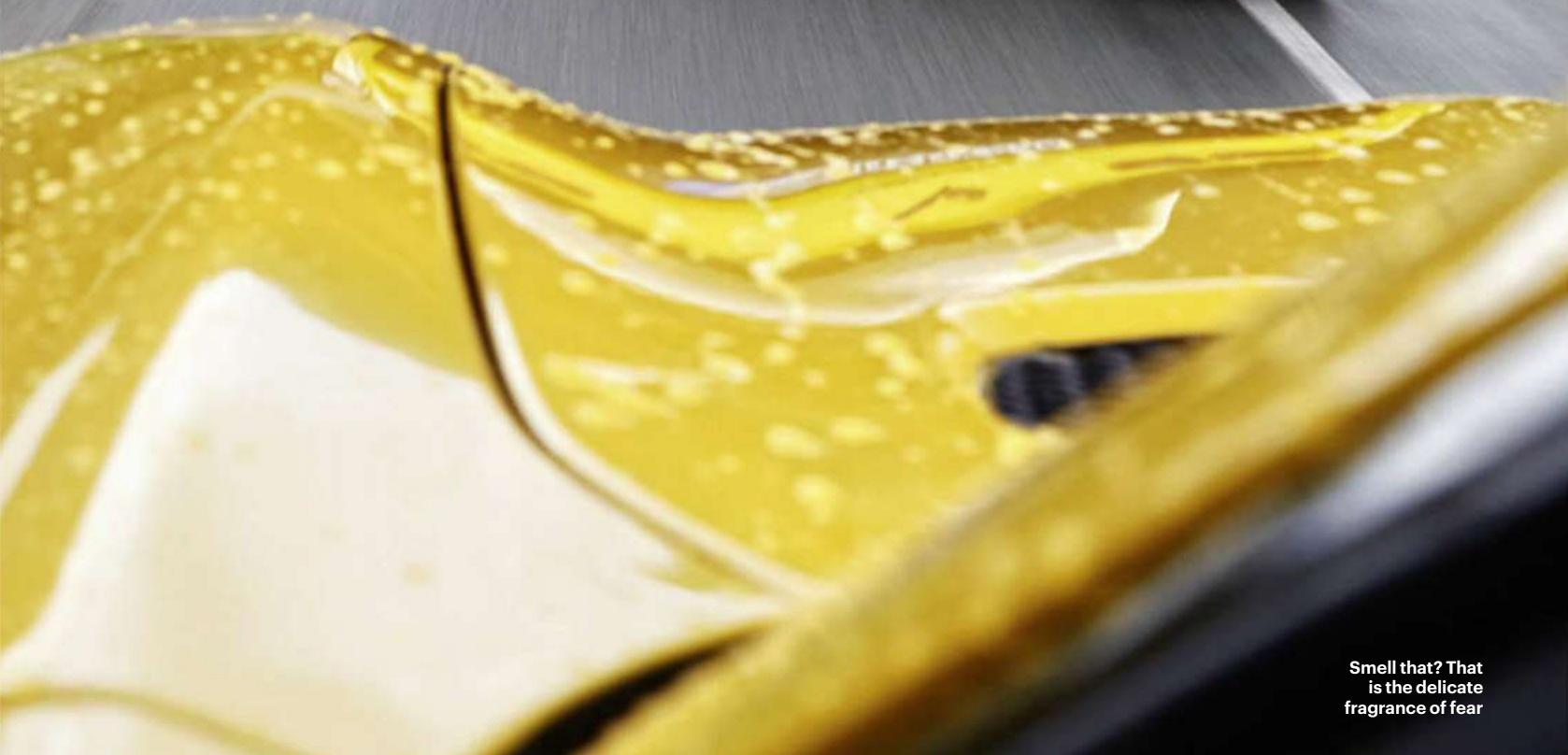
but think of it in that most un-American of terms – last of the winners.

The AMG GTS – also front-engined, also yellow – could not be more different. Where the Corvette intimidates, the GTS is accessible. Yet first impressions are anything but encouraging; cluttered interior, over-assisted and remote steering seemingly plucked straight from an S-class. Then you gather speed, and immediately you feel plugged into the GTS's superb balance and turbo-belying throttle response. For me, the AMG was the surprise of the test. This comfy GT is also an inspiring sports car.

JAMES TAYLOR



I turn the Z06's electronics back on, for fear of leaving Wales backwards and crashing into Birmingham



Smell that? That
is the delicate
fragrance of fear

Giant Test: 2015's best sports cars

Wisdom, Experience and Speed, the three horsemen of the Sports Car Giant Test



The consummate all-rounder and the Corvette. One's for living with, the other for making you feel alive



Feels so good on roads like these, almost as if it was engineered on UK soil...



make it just a bit terrifying in these conditions. Through a fast corner, the nose washes half-a-metre wide, and when I turn off the traction control there's such an excess of power that it becomes difficult to measure out in satisfying fizzes of tyre slip. I turn the electronics back on for fear of leaving Wales backwards and crashing into Birmingham.

I'm sure the Corvette would be epic in the dry, and it's important to stress that we're essentially on slicks battling a field of inters here (ditching the Z07 pack would've upped its chances in this instance), but today the 'Vette covers fewer miles than rivals; it just makes us all cry when we accelerate, though Gavin crowns the V8 the standout engine of the test.

Unbelievably, the Lamborghini is less intimidating. Two years ago the Aventador Roadster flunked our annual sports car test, but the SV feels like a different car.

Don't get me wrong; at first the fear factor is immense. You open the dihedral door, sink into a carbon chassis on what feels like a wooden chair wrapped in alcantara, unnerved that the brake pedal presumes left-foot heroism. It's like perching inside an arrowtip; near-horizontal windscreen,

roof whizzing overhead like a glancing bullet, nose disappearing to a distant point. Eyeballing the rear-view mirror is not for the faint-hearted: several metres of V12 wearing a Batcape lives back there.

But immediately the SV feels happier than any other Aventador. The revised inboard dampers bring suppleness and control, there's no tramlining and the steering has weight and tactility. Lamborghini's carbon brakes once offered quicksand-feedback but now you ease in on them, sensing the pressure build, working intuitively against the pedal. Amazingly the SV starts to cloak around you, giving you the confidence to exploit its potential.

And that potential is truly awesome. The V12 pulls ferociously as soon as you prod the throttle, yelping between gear changes and lunging at the redline with such endless linearity that you're too overawed to breathe. The sequential manual gearbox can be sluggish, but the harder you go the cleaner the engagement, especially in Corsa mode. Run to 8500rpm and the digital dash frantically strobos blue; pulling the paddleshift sends a defibrillator jolt through the powertrain, and speed continues to build on an apparently logarithmic scale. Really quick cars often silence passengers but the SV makes them oof and swear; they react in instinctive grunts to the V12's sensory bombardment.

Maybe in the dry the SV will be more grip-at-all-costs vicious, but in the wet the all-wheel drive has fluidity and delicacy. Okay, so sometimes the steering goes rigor-mortis solid as a massive hit of power churns through the front driveshafts, but the Lamborghini typically feels both rear-biased and sure-footed. They could've fitted more extreme tyres but the P Zeros' wet-weather performance, and the fact you can feel their treadblocks shifting, adds to the Lamborghini's unexpected and ▶

Eyeballing the SV's rear-view mirror is not for the faint-hearted: metres of V12 wearing a Batcape



Giant Test: 2015's best sports car



488 GTB's steering wheel plastered in controls



AMG's centre console doubles as an aircraft carrier



GT4 cockpit is so, so right; perfect ergonomics, lush materials



Aventador (with fire extinguisher) majors on intimidation



Paddleshift automatic the preferred Z06 transmission



Snug Lotus easier to climb into than before



GT3 RS is pure racer, albeit with nav and some very neat cupholders



Compact 675LT delivers the finest driving position here

**SECOND OPINION****488 GTB: can the ghost of 458 be laid to rest?**

Let's get this out of the way – the 488 GTB has lost the 458 Italia's volume-dial throttle response. But if the throttle response of new Ferraris has been tempered by a switch to forced induction, do bear in mind that compared to its naturally-aspirated rivals it's still pretty bloody sharp indeed. There's no lag as you and I know it. If anything the

powertrain's synapse-snappingly clever electronics make the engine's torque delivery feel more supercharged than turbo-blown. The wailing soundtrack is still superb and the savage lunge from 6000-8000rpm remains epic, so you'll want to rev the engine to its redline. And yet the now more muscular mid-range muscle spears the 488

out of one corner and on to the next with effortless arcade-game ease. And in normal driving – you know, the stuff that accounts for 99 out of every 100 miles covered – this makes the 488 a significantly easier car to drive fast. For a 660bhp car capable of quite indecent pace, the Ferrari is indulgently

benign and relaxed. It feels fluid and smooth, allowing you to pour it along roads at white-knuckle pace without the white knuckles. There's no twitchiness, no nervousness, just a confidence-swelling sense of calm and capability. Just like a 458. Only faster...

BEN WHITWORTH

very satisfying delicacy. You're left buzzing and deeply impressed; impressed that this old-school supercar serves up its analogue experience without caveat – it doesn't ask that you excuse a load of rubbish bits as 'character'.

The Lotus Evora does. Recently revised to be faster, sharper and easier to live with, thanks to a tweaked cabin and sills you don't have to be a long-jumper to straddle, the Evora 400 costs £72k and makes 395bhp from its now-intercooled 3.5-litre supercharged V6. There's a lot to like about the 400: the fingertip-delicacy of its steering is just sensational, the chassis flows and grips so you can attack as hard as your talent allows, and the V6 warble is deeply sonorous – 'sound-ed amazing when you came past,' says Ben Miller – with a meaty top end where the regular Evora once wheezed.

But it's easy to nit-pick. The seats are mounted nearly as high as the Toyota-sourced engine, there's pronounced roll from the rear when you really chuck it at a corner, and the pedals are set up like a Steinway's. The brake and throttle are too far apart for heel and toe, the throttle is tricky to modulate – 'and it gets worse in Sport,' notes James Taylor, 'like there's nothing at the top, then everything' – and the brake pedal's feel isn't clearly enough defined. But the Evora's biggest problem, of course, is the cheaper, better-resolved Cayman GT4. Question is, can the

GT4 give the 911 GT3 RS a run for its money?

Turn the key and the GT3 RS's 4.0-litre six chunders heavily at idle. You snuggle into low-slung, comfortable bucket seats – with a rollcage where a Carrera's seats would live, it's like the car's escaped from the GT department and grabbed sat-nav and Radio 4 on the way out.

The RS is a scintillating drive: accurate, nicely weighted steering; a super-sharp, closely stacked dual-clutch 'box; fearless brakes. Despite its race DNA the RS rides with amazing pliancy and grips so hard it feels like it'll peel tarmac from bedrock before letting go. The RS simply goes exactly where you point it, even when conventional wisdom would suggest the car's travelling far too fast to do so.

Somehow the six feels a little gutless from low revs in ▶

this largely turbo-assisted company, but the throttle response, noise and the feral violence that accompanies every mission to the 8800rpm redline is ultimately more rewarding. The torque deficit and accomplished chassis also means that the stability systems are safety nets, not essential equipment; you can use all that the 911 can give almost all of the time.

The Cayman, of course, is slower, but its steering also has less definition, and there's a bit more vertical choppiness to the ride, probably because of the mid-engined car's shorter wheelbase. The Cayman's brake pedal is also very firm right from the top of its travel, where the RS has a fraction more give; it's easier to accurately bleed off speed in the RS.

Broach their limits and the two feel quite different. The Cayman has some high-speed understeer on damp roads, so you exploit its intrinsic balance by tip-toeing right up to that line then throwing in a load more steering and throttle. The RS's limits are significantly higher, so to play with its balance you must go in hard on the brakes to shift some of the flat-six's weight from the rear wheels, then steer and accelerate more forcefully than in the Cayman. The first time you feel the rear slide, and realise you're dictating the angle of slip and that the RS is not going bite, is just sublime. It's playful and perfectly balanced and, for me, demolishes the idea that the Cayman is the more agile car.

The other great grudge match here? Ferrari versus McLaren, of course. Since the Ferrari 458 beat the 12C in 2011, McLaren has been busy. The 12C became the excellent 650S (third in last year's test) and now there's the 675LT; more focused chassis, 100kg lighter, more downforce, extra shove. Meanwhile, the engine that helped the 458 to victory – its incredible naturally-aspirated V8 – has been pensioned off, replaced by the 488 GTB's twin-turbo V8.

But the response of Ferrari's new engine makes you ▶



SECOND OPINION RS, SV and LT – too much for the road?

Does hardcore make for a better drive?
The 675LT, Lamborghini SV and GT3 RS Porsche are all firmer, faster and more featherweight iterations of three of the world's best supercars.

Vast rear wings advertise enhanced downforce. There's also increased power and, on the track-ready Porsche, a rollcage and a 'pit speed' button, crucial when fast-fuelling at Monza but somewhat less useful in a Welsh Shell garage.

The overt racetrack nature of the GT3 RS is one of its many appeals, backed up by that 8800rpm redline (and associated soundtrack), lightning-fast shifts, brilliant brakes, feelsome and precise steering, and a chassis of surprising deftness.

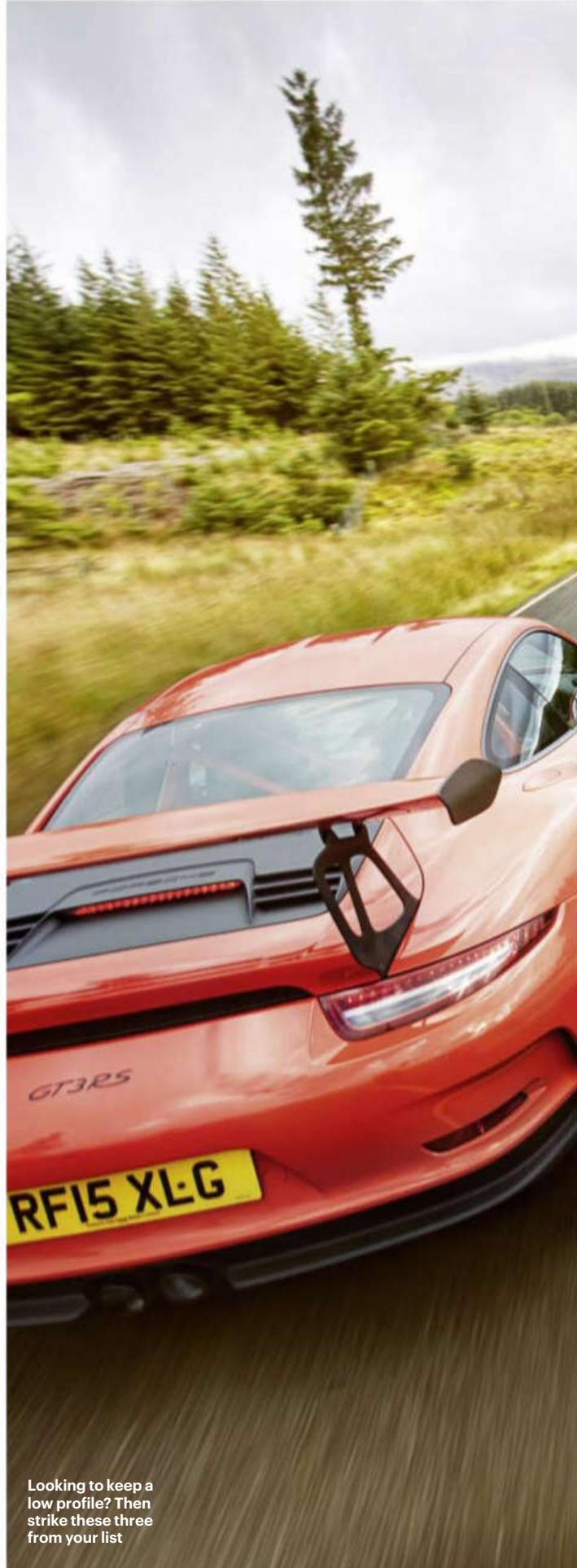
The SV is a surprise; far more composed on these challenging roads than the last cumbrous Aventador we sampled. The SV is agile, shrinking as you power on, never mind that the side mirrors betray just how close those big rear hips are to passing rocks and oncoming Transits.

And the LT? It's a car of superb agility, brilliant steering and great ride. It's the best car – F1 and P1 apart – McLaren has ever made. Equally, the SV is the best Aventador Lamborghini has ever made.

Is the GT3 RS the best 911? I'd choose something more discreet but if it's driving thrills you're after, no Porsche – not even the hybrid 918 – does it better.
GAVIN GREEN



WATCH THE VIDEO!
See the cars in action, hear those engines, listen to the team arguing! It's all on our interactive iPad edition



Looking to keep a low profile? Then strike these three from your list



Ferrari's famously fast steering is now meatier and better detailed than the bantamweight 458's

question if there are any blowers strapped on at all: there's no lag, just linear delivery and instant response and – because all 561lb ft is held back for seventh-gear flexibility – you're as keen as ever to chase the revs. The 3.9 doesn't have the 458's top-end scream, but the deep, bassy roar and whistling backfire still make you tingle, and the mid-range delivery simply destroys the 458's. Combined with a dual-clutch gearbox that's swifter than anything else here, it's actually impossible to fall out of the powerband.

The powertrain's precision, the easy accessibility of its *manettino* dial compared with McLaren's faffier Active Dynamics Panel and the sense of control you have over the electronic rear diff makes this an incredibly incisive car, one that's easy to push to its limits. Approach a corner, tweak the steering, feel the rear axle ready itself and then enjoy a carefree adjustability that's more rewarding than the 675LT.

First encounters can be a little off-putting though. Ferrari's famously fast steering – now meatier and better detailed than the bantamweight 458's – lends inertia-free agility but also conveys an initial nervousness; it takes time to dial in, and to understand that even the smallest inputs yield

exaggerated movements. Combined with the massive boost surplus, you can feel reluctant to play with the traction on a damp road; the well-judged stability control becomes an essential element of its frisky willingness to change direction, and I'd bet novices would put a 488 in a field before the GT3 RS if the government decided that electronic safety systems were cheats and we should all man up.

Yet this is a very accomplished supercar, and that's with the 488 GTB sacrificing ultimate performance to create something more rounded than the McLaren. The Ferrari's suspension is compliant, its cabin noise more hushed than the GT Porsches, the Pilot Sports better able to shift water than the McLaren's Trofeos.

A lighter, harder, faster 488 will be along to battle the 675LT in a few years' time, but that seems a long time to let a McLaren this focused roam freely. Climb in and you feel instantly hardwired into the 675LT: its P1 hypercar seats are mounted low and put your backside closest to the deck, Alonso-style. The steering bristles with texture, and every exploratory nudge at the faster rack builds confidence in a taut, connected chassis. The LT is a lot firmer than the 650S, and while the compliance remains impressive, I'd have made Normal my Sport, with a softer mode beneath.

The 3.8-litre twin-turbo V8 ▶

SECOND OPINION Lotus Evora or Cayman GT4?

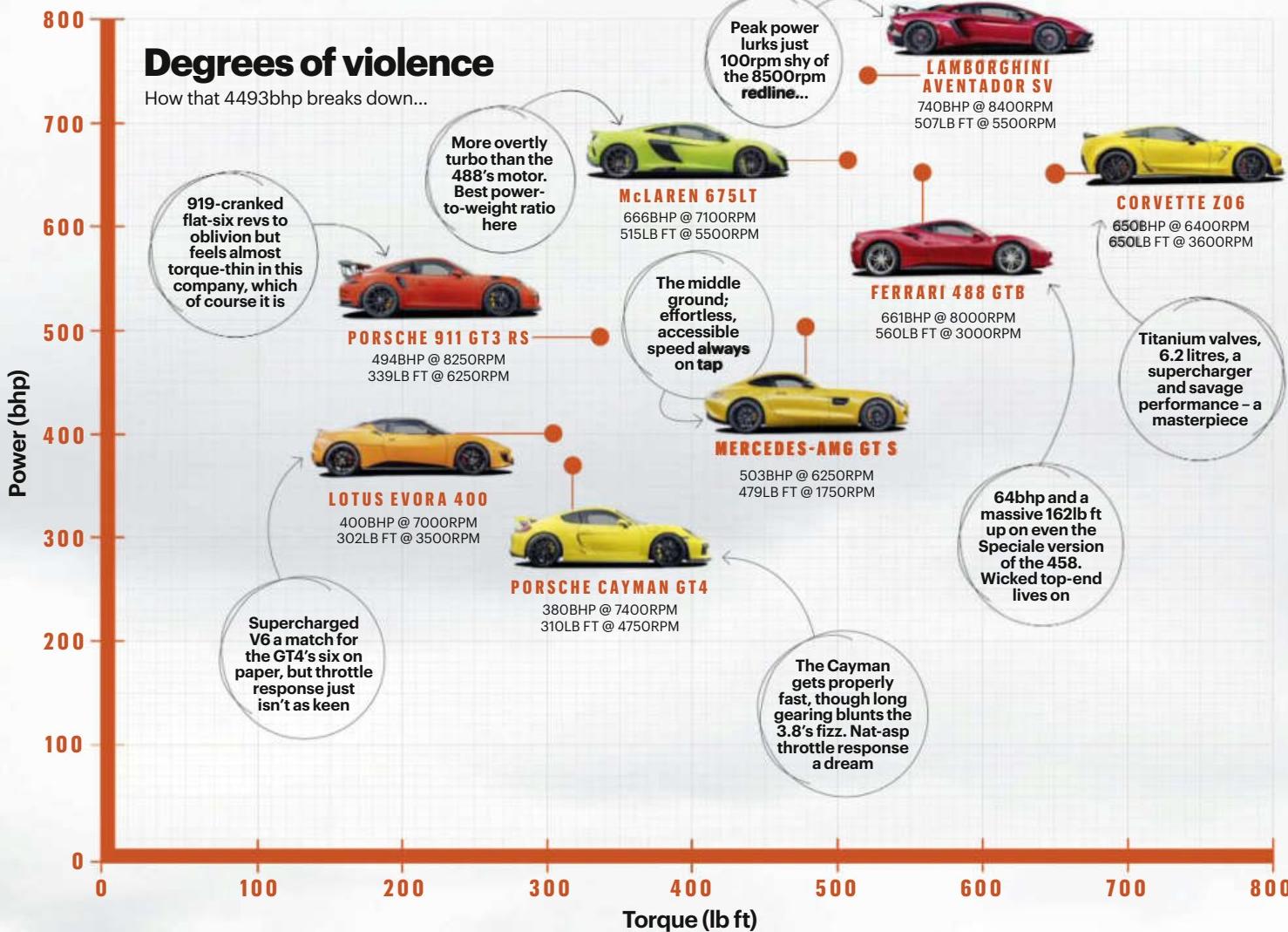
Combine the vast muddy puddle that is north Wales with a spectacular range of exotica and there are two absolute givens; agreeable disagreements and trenchfoot. Odd then, that, unprompted, we were unanimous on just one issue: in isolation the Evora 400 is a rather splendid thing...

There's a pleasing on-paper parity to the only two cars here offering a six-speed manual transmission, though the Porsche trumps the admittedly lighter – the steering wheel's magnesium! – and more powerful Lotus on price by £7500. Though the Evora's chassis remains a marvel and the steering utterly sublime, the absorbing fluidity of progress they combine to elicit is marred by the less than wholesome gear change, the occasionally awkward pedals which, when wet, mutate into three little bars of soap, the all-or-nothing throttle response, and so little flywheel weight that, unless you can change up faster than the aforementioned are happy to allow, the revs drop like an anvil kicked off a cliff.

Meanwhile the Cayman simply excels; beautifully linear controls, a gearchange sweeter than candyfloss and exquisite handling.

With UK's initial 50-car allocation all sold, getting hold of one won't be a quick or easy process. Sob.
ANTHONY FFRENCH-CONSTANT





makes a deeper growl from its titanium exhausts than the 650S; McLaren claims only a 25bhp and 16lb ft hike, but the new engine – 50% parts commonality – kicks with real ferocity. You still need 3500rpm before things get serious but that boost tsunami brings its own addictive anticipation.

Previously McLaren's seven-speed dual-clutch gearbox was too tardy to drop three gears in quick succession, with two coming snappily while the third slurred. Now the changes are like finger-clicks.

Like the SV, the McLaren presents its brake pedal to your left foot, and like Lamborghinis of old, McLaren's carbon-ceramics were once fuzzy when you toed at the first few centimetres. But the LT's brakes are exceptional; a little give as pads first clamp discs, then power and feedback even an untrained left foot like mine can decipher.

Because both the Ferrari and Porsche engines have such linear response, and because both have locking rear diffs, those cars have a crisper relationship between throttle pedal and rear axle when tyres start to slip, and that brings a



more satisfying sense of control, but the McLaren is still an incredibly interactive experience.

The sun's shining brightly now; standing water ebbing fast, the McLaren's hardcore Trofeo tyres keying into the surface. I wind third past 7000rpm, pull for fourth, spy a vestigial kick of spray round a corner and keep it pinned. When the road opens there's a huge red spoiler visible through the dazzle and spray ahead. I close on the GT3 RS, hear its 4.0-litre screaming to 9000rpm and wonder if I might just be driving this year's winner. Then there's a noise from the McLaren's bowels, a loss of power. I pull over. The GT3 RS disappears into the distance. Come on McLaren, you can retire from every other GP but you can't produce a car as exceptional as this only to fall at the final hurdle... ▶

**I wind the LT past
7000rpm, close on the
GT3 and wonder if I might
be driving the winner**



Corvette Z06



Engine 6161cc 16v supercharged V8 > **Transmission** Eight-speed paddleshift auto, rear-wheel drive, eLSD
Suspension Double wishbones with transverse-mounted composite springs front and rear > **Length/width/height** 4518/1965/1598mm > **Made from** Aluminium > **Fuel tank** 70 litres > **Official mpg** 20 > **CO2** 322g/km

1734kg

375bhp
per tonne

3.4sec

186
mph

Ferrari 488 GTB



Engine 3902cc 32v twin-turbocharged V8 > **Transmission** Seven-speed paddleshift dual-clutch auto, rear-wheel drive, eLSD > **Suspension** Double wishbones front and rear > **Length/width/height** 4568/1952/1213mm > **Made from** Aluminium > **Fuel tank** 78 litres > **Official mpg** 24.8 > **CO2** 260g/km

1475kg

448bhp
per tonne

3.0sec

205
mph

Lamborghini Aventador SV



Engine 6498cc 48v V12 > **Transmission** Seven-speed paddleshift auto, four-wheel drive > **Suspension** Double wishbone with horizontal pushrod front and rear > **Length/width/height** 4835/2030/1136mm > **Made from** Carbonfibre and aluminium > **Fuel tank** 90 litres > **Official mpg** 17.7 > **CO2** 370g/km

1525kg*

485bhp
per tonne*

2.8sec

217
mph

Lotus Evora 400



Engine 3456cc 24v supercharged V6 > **Transmission** Six-speed manual, rear-wheel drive, LSD > **Suspension** Double wishbones front and rear > **Length/width/height** 4385/1845/1229mm > **Made from** Aluminium > **Fuel tank** 60 litres > **Official mpg** 29.1 > **CO2** 225g/km

1325kg

302bhp
per tonne

4.2sec

186
mph

McLaren 675LT



Engine 3799cc 32v twin-turbo V8 > **Transmission** Seven-speed paddleshift dual-clutch auto, rear-wheel drive > **Suspension** Double wishbones front and rear > **Length/width/height** 4546/2095/1188mm > **Made from** Carbonfibre and aluminium > **Fuel tank** 72 litres > **Official mpg** 24.2 > **CO2** 275g/km

1328kg

502bhp
per tonne

2.9sec

205
mph

Mercedes-AMG GTS



Engine 3982cc 32v twin-turbo V8 > **Transmission** Seven-speed paddleshift dual-clutch auto, rear-wheel drive, eLSD > **Suspension** Double wishbones front and rear > **Length/width/height** 4546/1939/1288mm > **Made from** Aluminium and steel > **Fuel tank** 75 litres > **Official mpg** 30.1 > **CO2** 219g/km

1645kg

306bhp
per tonne

3.8sec

193
mph

Porsche Cayman GT4



Engine 3800cc 24v flat-six > **Transmission** Six-speed manual, rear-wheel drive, LSD > **Suspension** MacPherson struts with longitudinal and transverse links front, multi-link rear > **Length/width/height** 4438/1817/1266mm > **Made from** Aluminium and steel > **Fuel tank** 54 litres > **Official mpg** 27.4 > **CO2** 238g/km

1340kg

284bhp
per tonne

4.4sec

183
mph

Porsche 911 GT3 RS



Engine 3996cc 24v flat-six > **Transmission** Seven-speed paddleshift dual-clutch auto, rear-wheel drive, eLSD > **Suspension** MacPherson struts front, multi-link rear > **Length/width/height** 4545/1880/1291mm > **Made from** Aluminium, steel and carbonfibre > **Fuel tank** 64 litres > **Official mpg** 22.2 > **CO2** 296g/km

1495kg

330bhp
per tonne

3.3sec

193
mph



The reckoning

8

Corvette Z06

Extraordinary engine, fine chassis, scary tyres. Bargain in the US; £112,910 here...

7

Lotus Evora 400

Dreamy steering but the details will keep you awake at night

6

AMG GTS

Too well-rounded to win, but AMG's Gran Turismo is a fine sports car

5

Lamborghini Aventador SV

Best Lamborghini ever? Believe. A £315k, 740bhp triumph of evolution

4

Porsche Cayman GT4

The runaway winner if you factor in price. No wonder its biggest issue is availability

3

McLaren 675LT

A cut-price P1, and as focused and rewarding as the 650S is versatile

2

Ferrari 488 GTB

Breathtaking agility and speed, delivered apparently without effort

1

Porsche 911 GT3 RS

Special like a race car; practical like a (two-seat) 911. Best driver's Porsche yet

And the winner is...

By Gavin Green

E ALL LIKE the car that must come last – this is one of those tests. The Corvette's NASCAR V8 growl is bewitching, its punch of torque intoxicating, and the Z06 copes with narrow, undulating, pitted and gravel-peppered Welsh B-roads, surely the polar opposite of the wide, smooth blacktops for which it was bred. Had the Corvette engineers even heard of a Welsh secondary? Unlikely.

In the end, it's just not sharp and precise enough for a British B-road, not when it's facing opposition of this calibre. Those near-slick Michelin didn't help, though they certainly boosted the entertainment factor.

Conversely, the Lotus is designed for these roads. The Evora has the best steering here, a sublime chassis, and copes with the dips and turns of a UK secondary as easily as a swift deals with a thermal stream. The Evora flows over these roads, never fighting. The downside is the V6 engine, void of the throttle sensitivity that the rest of the car deserves. Plus, that homespun style is a problem, especially in a car costing more than the Cayman.

The AMG boasts the widest capability: surprisingly nimble over the moors, relaxed on the motorway. The twin-turbo engine is fabulous, the gearshift less so. I like sitting behind that long bonnet, hefty horsepower up front, but ultimately it just can't compete for entertainment on the twisty stuff, not up against the best from Porsche and Ferrari.

The Lamborghini SV – the traditional supercar of this bunch – won us over with its character, and surprised us with its composure. We love its V12. We love its agility, which defies its two metre-plus girth. In some key areas though – gearshift, seats – it can't compete. Plus the terrible visibility and video-game instrumentation undoubtedly diminish driving pleasure.



So our top three, from bronze to gold, runs McLaren 675LT, Ferrari 488 GTB, Porsche 911 GT3 RS. If value for money were a factor (it wasn't), the fourth-placed Cayman would win. How could it fail, when it costs half as much as a GT3 and one-fifth of an Aventador? We all love it. But its rival Porsche, the GT3 RS, is faster, sharper, more dramatic to drive, has more definition to its steering and better modulation to its braking.

The Ferrari is awesome, of course. The new turbocharged engine has slightly dulled the throttle sharpness of the old 458 and, more important, the linearity of the torque delivery. The flipside is that the turbo-inflating torque makes it easier to drive briskly, the power always on tap. It is a less frenzied sports car than the 911, more supple, less hardcore, not so immersive; majestically entertaining but somehow less engaging.

Ultimately, though, it doesn't thrill or reward quite like the GT3 RS, our winner. The Porsche is a track car boasting surprisingly civilised road manners. The throttle response and barely credible 8800rpm redline are both sensational, the gearshift crackerjack instant. It is, very possibly, the best driver's car Porsche has ever made.

And the 675LT? It may have won, were it not for its DNF – 'a powertrain issue on a pre-production press car, and the result of damage sustained on a previous activity' according to McLaren. To drive this driver-focused evolution of the 650S is to be smitten. The LT is more nimble than the GT3 RS, faster and enjoys better steering, though its engine is less sweet, if ultimately more forceful at high revs. The McLaren also boasts the finest driving position here. The only consolation is that there is always a next time. 



**The GT3 RS wins.
It is, very possibly,
the best driver's
car Porsche has
ever made**



ASTON, JAGUAR AND THE TRUTH ABOUT BOND





We don't have a British Motor Show anymore, but we do have the Bond films. And apart from being the biggest blockbuster film franchise on earth, these movies provide an unparalleled shop window for British cars. As Bond 24 – Spectre – opens in cinemas, with its cast of Aston Martins, Jaguars and Land Rovers, **Ben Oliver** uncovers the power of 007 to make British cars sexy for an audience of billions...



THE FRANCHISE

IT'S OFTEN asserted (but never proven) that half the world has seen a Bond film. It might well be true. Bond is the second most-lucrative movie franchise, behind Harry Potter but ahead of Star Wars, having taken more than \$6 billion at the box office. Yes, it has earned that figure over more time (53 years) and films (23, not including Spectre) than any other major franchise, but the size of the Bond back-catalogue and its easy availability on late-night TV and bootleg DVDs mean that audience claim might just be true.

The real Bond HQ isn't the MI6 building in Vauxhall but an anonymous office on Piccadilly, home to Eon Productions, which has owned the film rights to Bond since 1961. It only makes Bond films. It guards its 'golden goose' with Secret Service severity, and decides which cars get to star. Like its hero, the Bond franchise doesn't seem to be losing its allure with time. *Skyfall* was the first Bond film to make over a billion dollars and is the 12th highest-grossing film of all time, although if you adjust for inflation both *Goldfinger* and *Thunderball* made similar sums. ▶



Jaguar Land Rover's
Spectre cars on the
Frankfurt red carpet

THE DEALS

BOND'S CREATOR Ian Fleming name-checked Bentley and Aston Martin (and Rolex and Dunhill) in his original novels and short stories. His famously demanding, discerning hero was defined partly by what he chose to drive, use and wear, which makes the rampant commercialism of the Bond franchise slightly easier to stomach. The first paid-for Bond car cameo came in 1974 when defunct US manufacturer AMC paid \$5m for its crappy cars to feature in *The Man With The Golden Gun*, despite the fact that they weren't sold in Thailand, where their scenes were set. BMW did a three-picture deal with Eon starting with 1995's *GoldenEye*, and made a major contribution to the \$100m which '97's *Tomorrow Never Dies* raised in product placement, funding almost its entire production budget. Ford took over in 2002, paying an estimated \$35m for its brands – including Aston Martin – to star in *Die Another Day*, nicknamed *Buy Another Day* for the scale and lack of subtlety of its commercial deals. These deals don't always involve simply writing Eon a giant cheque: some or all of the payment comes in the

huge sums the brands guarantee to spend marketing the film, which saves Eon doing any advertising. But they don't always work. Heineken's \$45m deal to appear in *Skyfall* was probably the single biggest in Bond history, but after half a century of vodka-Martinis it just looked exploitative even to Bond fans, and there was a campaign to boo every Heineken appearance in the film. Eon will need a big cheque to swap Bond's Aston for a Geely.

DANJAQ/EON/UA/THE KOBAL COLLECTION

**The Man With
The Golden
Product
Placement**



BOND AND ASTON

THE MOST famous, long-lasting and authentic product placement in movie history nearly never happened. In his original novels, Ian Fleming gives Bond a vintage Bentley. But in the *Goldfinger* novel, first published in 1959, Bond borrows an Aston Martin DB3 from the Secret Service fleet in 'an inconspicuous colour – battleship grey' – and (with) certain extras which might or might not come in handy'. Bond producer Albert 'Cubby' Broccoli approached Aston's owner David Brown to borrow two of his then-new DB5s for the film, but in the polar opposite of today's big-money placement deals Brown demanded a large payment for the rights to use his car. A wiser head told him that it might be a good idea and he grudgingly relented.

This half-century relationship was forged in less than 15 minutes of screen time. In *Goldfinger*, the DB5 is done with

by the 47th minute, and in *Thunderball* its role is confined largely to the pre-title sequence. But they were two of the most successful Bond films, and the effect on the firm's fortunes continues. Aston sales leapt by 60% in the second half of the '60s. Equally, Corgi's famous die-cast model of Bond's DB5 became the fastest-selling 'car' of all time, shipping 2.5m in its first year and six million in total. Then, as now, the benefit of Bond to Aston is in its creation of the desire to buy one, even if you don't yet have a driving licence, much less the funds. That equity has probably saved Aston at least once. Like Bond, it has had regular near-death experiences and the value of the Bond association has probably made the difference between life and death in several of its seven bankruptcies. Bond has been saved by his Aston, and he has almost certainly returned the favour.



The DB5: in its 15 minutes on screen a legend was born, and a company was saved several times over



Spectre director Sam Mendes saw this sketched on Aston's wall. 'Can we do that?'



THE DB10

BARBARA BROCCOLI and Michael Wilson (the film's producers) got in touch and said that they'd love us to be in the next movie,' Aston's chief creative officer, Marek Reichman, tells CAR.

'So we brought them and Sam (director Sam Mendes) into the design studio and showed them our future cars. That's how close the relationship is. As I was showing them a car that comes out next year, Sam looked to one side and spotted a sketch on the wall. He asked me about it. I explained that it was an idea for a car that we hadn't developed yet. "I love it," he said. "Can we do that?"

'We then started to talk about how iconic this product could be if we designed it just for Bond. In a recent poll the DB5 is the first car people associate with Great Britain. It's gone beyond just car iconography: it's part of the iconography of this country now. We thought it would be amazing to replicate that for the next generation of moviegoers and fans. So we decided, okay, for the first time in our history we will develop a car just for Bond.'

With the entire Aston range about to be replaced it made little sense to put Bond in an existing model, but it gave Reichman and his team just five months between that first meeting and the first cars being delivered for filming. So although the DB10's exterior is unique and hints at Aston's new design language, the ten cars required for filming were hand-built on

the Vantage chassis by Aston Martin's 'Q' bespoke division, named with neat circularity after Desmond Llewellyn's Secret Service scientist who creates Bond's cars and gadgets.

So if the DB10 hints at future Aston Martins, what should we be paying attention to? 'Look for the simplicity of its body sides and the fact that the car has this appearance of downward motion,' says Reichman. 'The waistline actually has a falling line, so the car has an amazing drama through its side section, which is very pure, very simple.'

'Then if you look at the front, it's a shark. I wanted the car to be a predator, just as Bond is a predator. Bond is someone who is very attractive to look at, but he's also very menacing, and I wanted the car to have a similar feel. Sharks are beautiful things to look at, but do I want to be dangling my legs in the water with them? Certainly not.'

'And finally there are all of the beautiful highlight details that you'll see so well on screen because of how Sam has lit the car.'

But what you really want to know about is the gadgets. 'All I'll say is that in terms of excitement and the unexpected, this car has everything,' he says. 'We all remember those great scenes in the early Bond movies. There's a little bit more seriousness in the recent movies, but this one has some unexpected gadgets, and brings back some that we all love. Yeah, without saying any more about it, the gadgets are great.' ▶

Does this look to you like a five-month lash-up? Us neither. Clues to next year's DB11

Designer Reichman: 'The front looks like a shark. I wanted it to be a predator'

'Everyone knows we're the car Bond drives. Is that worth £x million to us? I think so'



Everyone knows you take your life in your hands driving in Rome. But this is ridiculous

THE BAD GUYS



C-X75: five were hand-built for the film on a space-frame chassis

JAGUAR LAND Rover's formal relationship with Bond goes back to 2002, when parent company Ford paid its way in, and villain Zao drove a rather camply modified XKR. Now independent and riotously successful, JLR could afford to pay for its cars to be included, but doesn't need to. A sense of Britishness is as important to a Bond film as the stunts and the girls, and you can communicate that more clearly with the cars used than with the cut of his Savile Row suit. John Edwards is the director of JLR's Special Vehicle Operations division which built the 22 cars supplied to Eon, including Range Rover Sport SVRs, special ops Defenders and seven C-X75s needed for the main chase sequence between villain Mr Hinx and Bond's DB10 in Rome.

Two of the original C-X75 concept cars were used for static shots and the 'dynamic' cars were hand-built over a space-frame chassis and using the 550bhp supercharged V8 from the F-type. 'I'm not sure what state they came back in,' says Edwards. 'I suspect they'll be heading to a scrapyard soon.' Edwards says that JLR didn't pay to appear, but seems not to really know or care how much the project cost, or the value of the exposure Jaguar and Land Rover get in return. 'I'm slightly sceptical of the accuracy of those values anyway. You just know how many people are going to watch the film. You know it's going to be a success. I think it's a no-brainer.'

THE IMPACT

'**I**KNOW the cost of doing product placement,' Aston's CEO Andy Palmer tells me. 'This isn't product placement because we don't pay for it, but if we had to, we couldn't afford it. We still have to supply the cars and that's a major commitment for a company of this size. Do I know what it costs us? Yes. Am I going to tell you? No. But it isn't cheap. In a bigger company I could tell you the value of what we get in return, but those numbers

are often bullshit anyway. But this helps us reach the kids. It broadens the very top of our sales funnel out to include billions of people. When you go to the Far East, and especially to China where we sell 200 cars a year and are virtually invisible on the road, everybody knows that we're the car that Bond drives. And soon we'll have models like the DBX that can capitalise on that. Is that worth £x million to us? I think so. It's intuitive. This feels right.'

Bad guy Hinx
(David Bautista) at
the wheel of the
Jag. The real stunt
driving was done
by Russian rally star
Martin Ivanov

Ivanov steers from
the roof pod. C-X75
can do 100mph,
even in this
precarious trim

Stunt driver Mark Higgins: 'Driving down those stairs you never quite know what the car's going to do'



THE ACTION

THE DB10 and C-X75 had their moment when, for 17 days in March, the Bond second unit took over Rome to shoot the big car chase. If you think 'taking over Rome' is an exaggeration, consider this: the second unit comprised 350 people, augmented by a further 250 locally hired 'blockers', whose job it was to make sure locals didn't wander innocently into shot. 4km of the River Tiber, including five bridges, were closed off, along with 15 other city locations. Most implausibly, a mile-long stretch of *Via della Conciliazione* was closed off to allow the chase cars to engage in a 100mph dice right in front of the Vatican.

Eight of the 10 DB10s were on duty along with five of the Jags, each car having a specific purpose during filming. Two of the Astons are 'pod cars', featuring a roof-mounted cage with remote controls which allow stuntman Mark Higgins to drive while the actors are filmed in the cockpit. Two of the DB10s have no engine, battery or any fluids, this being a condition of them being allowed to operate next to the river, with the attendant possibility of ending up in the drink.

Three-times British rally champion Higgins doubles for Daniel Craig – Paul Smith suit, Omega watch and all – although the Alpinestars race boots give the game away. 'The Aston's incredibly strong,' he tells CAR. 'Driving it down the steps was tough on my back, but the car was fine. It needed sump guards and different suspension, that's all. Carrying 100mph through Vatican Square sideways was certainly interesting. We did a lot of practice at Millbrook and MIRA but you can't simulate wet cobbles.'

Isn't it scary driving like a madman in precious cars on precious streets? 'I've scared myself,' admits Higgins. 'But I can't scare Daniel – he's James Bond.' ☀

©@thebenoliver





car INSIDE MERCEDES F1

Even Lewis needs a pass to get in here

It may look like a retail park, but a jumble of units in a Northamptonshire market town is home to the F1 world champions. Boss Toto Wolff gives CAR a guided tour

Words Tom Clarkson | **Photography** Andrew Shaylor



 **Boss Toto Wolff:** 'I'm a sparring partner, a coach and a friend'

 Great, but they're equally proud of the trophy for winning the 2015 Brackley Soapbox Derby



Toto Wolff with our man Tom Clarkson and the Mercedes autoclave inside the Brackley factory. All the carbonfibre components are baked in here

'They're very different places, but this is much more as you'd imagine a racing team to be,' said Lewis Hamilton.

It isn't as smart as the MTC, but it's more practical; it's more old school.'

Lewis was comparing old and new on his first day as a Mercedes driver back in January 2013. He was being tactful, but he couldn't hide a wry smile when highlighting the differences between McLaren's \$450 million, Norman Foster-designed, largely subterranean Technology Centre in Woking and Mercedes' rather less ostentatious cluster of buildings near Brackley known as the 'Operations Centre'.

'The McLaren factory is futuristic,' he went on, 'but this place has everything you need to go racing at the front. It's practical; I fancy our chances of building a good car, which is why I've switched teams.'

How right he was: Mercedes have dominated Formula One for the last two years, while McLaren have slipped steadily backwards. Mercedes have epitomised practicality and efficiency from their modest factory; McLaren have looked all show and no go. There are no coy carp or pillarless, glass-fronted buildings at Mercedes Grand Prix in Brackley; the team is all about functionality, of the kind that McLaren boss Ron Dennis must be supremely jealous of at this moment.

THE FACTORY IS hidden from view by trees. Anyone driving north up the A43 towards Silverstone would be unaware of its existence, unless they were shopping in Brackley's out-of-town Tesco. Opposite the supermarket's main entrance is a mini-roundabout, beyond which lies the 60,000 square metre site of Mercedes GP. As world championship-winning entrances go, this one is low key; the only giveaway sign that something a bit swish is made inside is the large number of Mercs parked in the car park.

Guests have to stop at the gatehouse and give their name and car registration. Only then can they head into the inner sanctum of the team, which – and please take this the right way, Merc people – has the feel of a shopping retail park. A mix of grey buildings, in which Currys PC World wouldn't look out of place, hems in the car park. Instead, however, the buildings are home to facilities such as the paint shop and the wind tunnel of the best team in F1.

The distance between the buildings is small, but if tech boss Paddy Lowe is doing his departmental rounds on a rainy day, he's still going to get wet. It's very un-McLaren, where Paddy worked for 20 years prior to joining Mercedes in 2013.

'It's a bit different to McLaren,' he says, 'but I'm very happy with our facilities here. It's all totally cutting edge. Actually, I like the layout because it means I get to take a bit of exercise during my working day!'

The walk from the visitors' car park to reception takes you past the directors' parking bays. They drive Mercs, as you'd expect – it's all AMG GTs and S65 AMGs – and the cars are all reversed into their parking spots. No OCD here then. Glass doors invite people into the reception area, the décor for which can best be described as Stuttgart chic: art deco chairs, immaculate wooden surfaces and an eclectic mix of pictures.

The team's ever-expanding trophy cabinet sits on the left and taking pride of place, just to the right of centre, is Hamilton's title-winning W05 F1 car. It's the actual chassis in which he won his second world championship at last year's Abu Dhabi Grand Prix, stone chips 'n' all. ▶





DEDICATED GEARBOX TOOLS DO NOT USE



CNC machine manufactures gearbox parts. Cost a cool €3m



Selling them on eBay is easy;
smuggling them past security
less so

Brackley HQ: a quick history

The Brackley factory was built by British American Tobacco in 1997 as the operations centre for its F1 team, British American Racing (remember them? Jacques Villeneuve, bizarre double livery etc?). The team promised to win its first GP in 1999, but it failed spectacularly, scoring not a single point in the entire season. It continued to underperform until it was sold to Honda in 2006.

Despite the efforts of Jenson Button, more lacklustre seasons followed, and Honda bailed from F1 at the end of 2008. The 700 staff at Brackley continued

to work on the next car while a buyer was sought, and after an uncertain winter team principal Ross Brawn came to the rescue with a management buy-out. Brawn GP brought the world championship to Brackley in 2009, winning eight races, leading to interest from Mercedes, who bought the team in 2010.

BAR: first F1 car made in Brackley



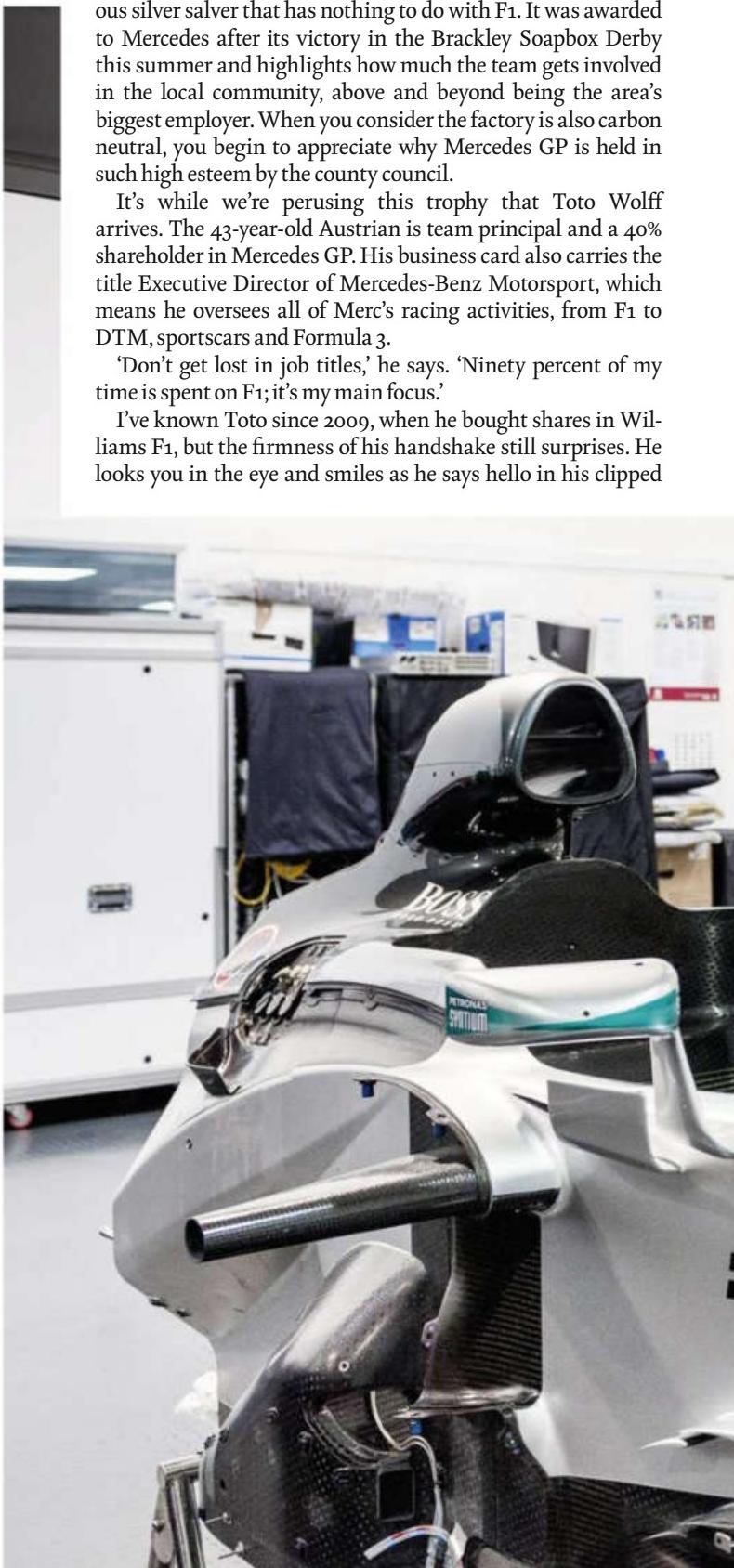
To get deeper into the factory, everyone – even Lewis, so we're told – needs a pass. The receptionist dials up Toto Wolff to inform him that CAR is in the building and while we wait for the team boss's arrival, we spend more time looking around reception. There's a huge pile of chocolates in the corner, a fresh delivery from sponsor UBS, who give all 700 employees a box of chocs after each race win. Last Sunday's win at Monza was number 10 for the season. 7000 boxes of chocolates? It's amazing the team doesn't have a collective weight problem!

The trophy cabinet is rammed with reminders of podium positions won in the last four years, but there's one incongruous silver salver that has nothing to do with F1. It was awarded to Mercedes after its victory in the Brackley Soapbox Derby this summer and highlights how much the team gets involved in the local community, above and beyond being the area's biggest employer. When you consider the factory is also carbon neutral, you begin to appreciate why Mercedes GP is held in such high esteem by the county council.

It's while we're perusing this trophy that Toto Wolff arrives. The 43-year-old Austrian is team principal and a 40% shareholder in Mercedes GP. His business card also carries the title Executive Director of Mercedes-Benz Motorsport, which means he oversees all of Merc's racing activities, from F1 to DTM, sportscars and Formula 3.

'Don't get lost in job titles,' he says. 'Ninety percent of my time is spent on F1; it's my main focus.'

I've known Toto since 2009, when he bought shares in Williams F1, but the firmness of his handshake still surprises. He looks you in the eye and smiles as he says hello in his clipped



Austro-English accent. He then flashes his 'access-all-areas' card and we enter the factory proper.

This pass system is another difference between Mercedes and its main rivals. Red Bull Racing, for example, have adopted a fingerprint system to access different parts of their Milton Keynes factory, but Mercedes continue to use the pass system that was used by British American Racing, when they built the factory back in 1997.

The link to BAR is a reminder of how much F1 has moved on in the last 15 years. In the mid-'90s BAR were considered cutting-edge and F1's more unkind pontificators guffawed at the decadence of their factory. A lot of people got pleasure from the fact that BAR never won a race. Nowadays, the factory is considered functional rather than extravagant.

Toto's office lies on the first floor, adjacent to the marketing office. That's significant because it immediately helps to define the job split between him and tech boss Lowe. In short, Paddy looks after the car while Toto oversees everything else, which is predominantly politics and marketing. Hence his juxtaposition to the team's marketeers.

The coffee flows freely and Toto explains how he came to lead the dominant F1 team of the moment. 'Mercedes wanted what they called a managing partner,' he says. 'They wanted someone involved who had skin in the game – a shareholding – and they were quick to

remind me that I was now representing one of the best brands in the world.'

Over the course of our chat, and the subsequent tour he gives us around the factory, Toto's management style becomes clear. He's open with everyone, whatever their job title, and he's friendly and enthusiastic. 'I'm a sparring partner, a coach and a friend,' is how he describes his relationship with other team members. 'I have a very long-term strategic perspective; I try to put things in place three years ahead of time.'

He is quick to praise the contribution of his predecessor Ross Brawn. The Englishman left the team at the end of 2013, a matter of weeks before Mercedes unleashed their current stranglehold on F1. There's no doubt that Ross laid the foundations for the team's current success, and Toto knows that.

'Ross did a tremendous amount of work to get us where we are today,' he says. 'It's now up to Paddy and me to maintain our advantage and to take things forward. My biggest fear is of losing our current advantage.'

It was to protect the team's winning edge that Toto turned down Red Bull when they asked for a supply of Mercedes engines in 2016. 'The disadvantages outweighed the advantages,' he says. 'I'm always proposing ideas for the good of F1, but I won't agree to anything that will compromise my team. That's not what I'm paid to do.' ▶

**It's here that
200,000
man hours
are ploughed
into getting
two cars onto
the grid**



We move from Toto's office to the design office, which is a massive open-plan room that's home to some of the best automotive brains in the world. To get there, we pass through a couple of doors that require more pass authorisation and we stop briefly to marvel at some wall-sized photographs of 1950s Silver Arrows.

At one end of the design office, which is known colloquially as the 'DO', is the Remote Pit Garage. It's here that the race engineers base themselves between races and, when they're away racing, a fresh group of engineers and strategists move in to back-up their efforts. These factory-based engineers can talk to the pitwall in real time, contributing to every aspect of strategy and car set-up.

There is every possible timing screen on the wall, plus a cinema-sized TV. There's no F1 taking place on the day of our visit, so the screens are tuned in to practice at a World Endurance Championship race in Germany. Clearly, these guys are true racing nuts; they aren't boffins who stumbled into racing for want of something better to do.

The design office itself is divided into areas of the car; the gearbox designers all sit together, for example. Situated in a separate wing, but still in an open-plan format, are the heads of department – guys like Aldo Costa (engineering director), Geoff Willis (technology director), Mark Ellis (performance

director) etc. 'You have to be really brainy to sit over here,' says Toto, 'which is why my office is so far away!'

Toto is of course being modest because a more impressive CV would be hard to find in F1. He was educated at the Lycee Francaise in Vienna where, among other things, he played a lot of rugby. His entrepreneurial spirit shone through from an early age, when he sold candles at a protest march against Jorg Haider, a far-right Austrian politician, and he went on to sell steel for ring binders, which proved successful enough to finance a promising racing career.

However, he proved to be a better entrepreneur than racing driver and a massive shunt on the Nurburgring's Nordschleife resulted in him focusing on his business interests. His F1 involvement began in 2009, when he bought a minor shareholding in Williams, and he quickly expanded his portfolio to include the management of Valtteri Bottas. Then came the opportunity with Mercedes a couple of years ago.

'A racing team is different to the other businesses I've owned,' he says. 'We have to prove ourselves 20 times a year, not four times a year like in a public company. It's very fast paced.'

'We work hard to keep the right people in the right jobs. We have an HR system that filters the high performers from the ones we consider to be neutral or inconsistent and it flags up when someone's contract is going to run out so we can work on renewing it.'

More than 250,000 man hours go into the design of an F1 car. At any one moment the design team will be working on three different projects: the current car, the one for the following year and the one two years down the road. It's a manifestation of Toto's three-year policy and the amount of resource attributed to each project varies according to the stage of the cycle.

From the design office, Toto leads us downstairs to the race bays and to some of the main production areas. It's here that more than 200,000 man hours are ploughed into getting two cars on the grid. Such is the intensity of the F1 schedule that the lights never go out, except during the enforced two-week F1 summer shutdown and on Christmas Day.

There are five race bays and it's here where the cars return after each race to be stripped and rebuilt. Parts are lifted and replaced

when necessary, and the whole turnaround takes three days, although it can be done significantly quicker when there are back-to-back races.

Each bay is surprisingly small; there's room for only one chassis and the mechanics have to be tidy in their work. It's incredibly well lit and there are portable spot lamps to help with those recessed parts caught in the shadows. At one end there's a white board, where the number one mechanic writes notes about the work that's taking place and the rest of the guys write their tea orders.

It's also in the race bays that the entire team gathers at 2pm on the Monday after each race to receive a debrief from either Toto or Paddy, or sometimes both. They give a warts 'n' all appraisal of the weekend's work and sparkling wine is served if the team has won. ▶

Even in the age of six-pot hybrids you still need ear defenders. Imagine what it was like in the V10 era!



Lewis's car Made in Brackley!

There are more than 10,000 parts in an F1 car, split 60:40 between chassis and power unit. In the case of Mercedes Grand Prix, the power unit is produced at Mercedes High Performance Engines, just 27 miles away in Brixworth, which leaves just the chassis to be manufactured in Brackley. The chassis is designed in-house and more than 80% of it is built there too, including all of the carbon composite parts. Only the more exotic materials are out-sourced to specialist companies. All of the painting is done at Brackley. Once four chassis have been produced at the start of a season, most of the factory is dedicated to making spare parts. Such is the price of a reliability failure, both literally and in terms of points, that parts are lifted very conservatively.



The hot seat is literally that, as it's baked in an oven. Lewis Hamilton's talent counts for nowt if he's not sitting comfortably

**'You have to be really
brainy to sit over there,
which is why my office
is so far away'**





Stickers? What, and risk a microscopic rough edge?
No – everything is painted, using lightweight paints

Above the race bays is eBay heaven. A mezzanine floor houses old parts from previous cars – floors, rear wings, engine covers, suspension components – and it's the only scruffy area in the entire factory. Someone no doubt knows what all of the parts are, and which chassis they come from, but it's not immediately obvious to the untrained eye.

'It's a brief history of the team up there,' shouts one of the lads. 'Worth a few quid.'

Next door is the composites department. The contrast with the spares area is extreme: you could eat your lunch off any of the immaculate surfaces and people wearing plastic overalls are bent over double, layering carbon with the precision of plastic surgeons. They're working on a new chassis in one room and what looks like various suspension components in another. We're allowed in neither area because dirt and dust compromise the bonding process, but it's still impressive through the window.

Toto then takes us on a whistle-stop tour of the giant ovens, where the carbon parts are cooked, and he then shows us a new €3 million CNC machine, which is used for manufacturing gearbox parts. It's sophisticated, although the A4 ring binders being carried around by staff are proof that pen and paper still has a place in this high-tech world.

We cross the car park to enter the paint shop, which doesn't need much explanation here. The spray techniques are elaborate and thorough, and a lot of research goes into new lightweight paints. Another point of note is that the bigger sponsor decals aren't stickers; the logos are painted onto the bodywork to



improve the airflow over the car. No rough edges permitted.

The wind tunnel is in another nondescript building. If we showed you photos of the 60% model being tested we'd have to kill you, but believe us when we say the level of detail is second to none. It's everything you'd expect of a tunnel that was modernised in 2012, making it one of the most up-to-date in F1.

But that's the thing about this factory: everywhere you go, you have to dig beneath the slightly bland exterior to discover its gems, of which there are many. There's no showing off; the money here is spent on performance. The design office, the wind tunnel, the production areas, all are fertile breeding grounds for ideas. They reflect the no-nonsense, entrepreneurial spirit that permeates from the man at the top. Brackley is in fine fettle, then. Just as well, as there is *always* Maranello. 

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**Above the race bays
is eBay heaven: parts
from previous cars.
'Worth a few quid!'**

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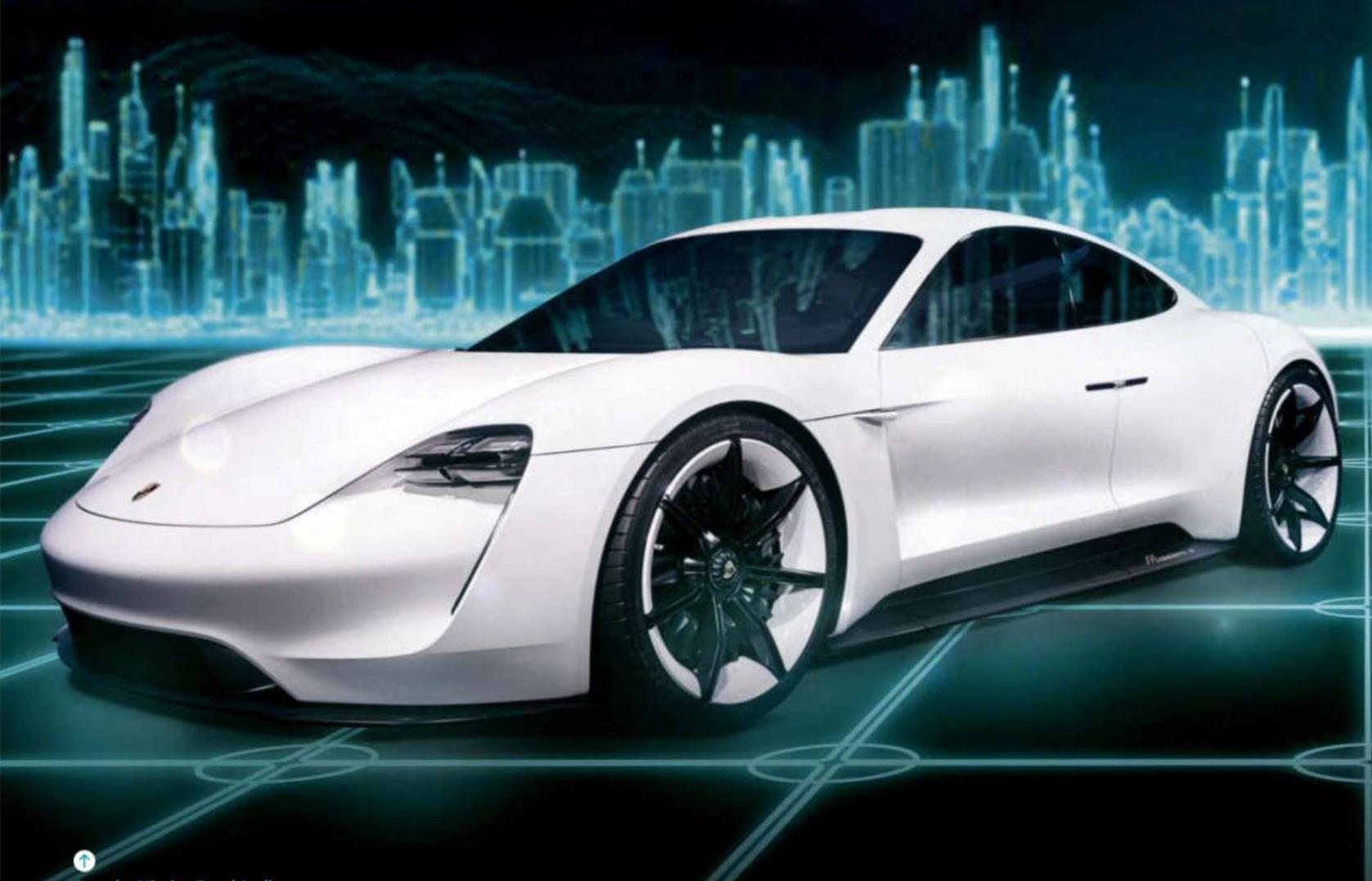
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Tesla looked to have Electric Avenue all to itself, but suddenly there's heavy traffic. VW Group may have lost its diesel footing, but its two premium brands are alive and well – and going electric

NIGHT



Porsche Mission E and Audi
E-tron Quattro (aka Q6).
Heading silently to your
driveway in 2018

IMAGINE ON TESLA STREET

Words Georg Kacher | Photography Steffen Jahn





**Both will go on sale in
2018 – soon enough to
rattle the teacups at
Tesla Towers**

Dramatic single-piece tail light will make the cut for production



VEN IN THE CORRIDORS of Porsche HQ the Mission E concept car is known as 'Tesla fighter'. Maybe the E stands as much for Elon Musk as it does for Electric. Either way, you're looking at a seismic shift in impetus for the way premium cars are powered, and the timing could not be more apposite coming from the VW Group at the exact moment its diesel credentials have been savagely invalidated. Has #dieselgate inadvertently accelerated the evolution of the electric car?

It's not just Porsche – sister brand Audi is going Tesla-chasing too. Its E-tron Quattro concept, which went toe-to-toe with Mission E at the recent Frankfurt motor show, will go into production as the Q6. Both will go on sale in 2018 – soon enough to rattle the teacups at Tesla Towers.

One thing that's immediately obvious from these pictures is that premium electric cars have to look sensational. The designers have had an absolute field day. Beaming Audi design chief Mark Lichte is as proud as Punch as he lifts the veil off the Q6. 'This is the signature look you will find on all future

Like a Q7 that's been squashed and sportified... and pumped full of electricity

electric vehicles by Audi,' he tells CAR. 'But this time, it's the detailing that makes the difference. Check out the bespoke E-tron grille treatment, the five horizontal chrome bars, the staggered brightwork below the headlamps and the full-width taillights which will reappear on other high-end models.'

The proportions are indeed much sportier than those of the stately Q7. Which is no surprise since the Q6 has a loose genetic connection to the next Q5. Slightly longer and wider than its sibling, the Q6 is much lower, more coupe-like in profile and yet quite chunky overall. 'The relatively small frontal area helps us to achieve a drag coefficient of only 0.25. Other contributing factors are cameras instead of door mirrors, three active aerodynamic elements and a controlled airflow through the wheel houses.' What Lichte forgets to say is that the production version will look like the show car.

Does the E-tron share its zero-emission technology with the Mission E? Yes and No. The lithium-ion batteries, with a combined capacity of 95kWh, will be provided by the same suppliers, LG and Samsung from Korea. But the vehicle concepts differ. Audi has opted for three motors and for an innovative combined charging system which can digest DC (fast) and AC (slower). The monolithic battery pack is integrated in the floorpan for maximum packaging efficiency and the lowest possible centre of gravity. Wireless charging will also be an option. After 50 minutes of charging there should be enough energy on board to cover over 300 miles. In boost mode, the e-motors – one in the front, two in the back – muster, briefly, a combined 503bhp and 590lb ft of torque. Audi claims a 0-62mph time of 4.6 seconds and an electronically limited top speed of 131mph.

Although it is linked to the next Q5 built in Mexico, the home of the Q6 is Brussels. In the former VW factory, Audi ▶

plans to install a bespoke assembly line which can eventually handle up to 45,000 vehicles per year. The Q5 matrix, dubbed MLB super evo, will need to be modified to make room for the energy cells and the electric motors. It makes you wonder why the brand's first battery electric vehicle is an SUV and not a low-drag saloon. I asked that question of Ulrich Hackenberg, who until very recently was board member in charge of r&d. 'Because of the strong impact this bodystyle has on the market,' he said. 'By certifying the vehicle as SUV in North America, we generate a healthy volume base.' The design is unlikely to change much before production starts in March 2018, but there will be quite a few minor adjustments – such as smaller wheels than the 22-inchers shown here, LED headlamps (not lasers), a motorised rear diffuser and roof spoiler, a less radical cockpit layout (minus the curved OLED display) and a new ergonomic concept derived from the next A8.

'We could have developed a bespoke architecture for the Q6, but this would have required a much bigger budget while barely boosting sales because of the higher price,' Hackenberg tells us. 'That's why we settled for a derivative concept which is flexible, relatively affordable and easier to put together.' For easy repair and maintenance, the batteries – cylindrical pouches bundled in groups, then stuffed in boxes – sit in a readily accessible underfloor drawer. Although the cells are allegedly state-of-the-art, the entire assembly weighs a massive 650kg, making even the lightest Q6 a 2.2 tonne behemoth. A fully equipped top-spec model weighs up to 2.5 tonnes. On the plus side the cargo volume is not compromised by the demands of packaging, remaining at 615 litres, or 75 litres more than Q5.

'Despite its environment-friendliness, this is also a proper driver's car,' claims Hackenberg. 'It handles like a sporty crossover, it rides very well on height-adjustable air suspension, and

thanks to plenty of instant torque the performance is simply amazing.' Other dynamic assets include big brakes with ample recuperation ability, enhanced stability thanks to rear-wheel steering and aggressive, rear-biased torque vectoring.

Shown at Frankfurt in thin disguise was the top-of-the-line version rated at 435bhp, plus on-demand boost bonus. Although pricing is still tentative, we expect this version to cost about £59,000. Two other versions, a 360bhp model at £51k and a 320bhp entry model at £44k will appear at launch, followed later by an RS hotshoe, which is said to deliver over 680bhp.

If those prices set you reeling, look away now, because Porsche is pitching the four-door Mission E at around £92,000 – right in the face of Tesla's Model S. 'We have not yet signed off this project,' states Porsche chief Matthias Müller – who, since we spoke, has been diverted to the modest challenge of running wounded Volkswagen in the wake of #dieselgate. 'But when our company presents a show car, it typically reappears at dealerships a few years later.' Irrespective of its alternative propulsion system, the Mission E – alternatively codenamed Pajun and J1 – is a strikingly beautiful piece of kit designed by Michael Mauer. A crouching 1300mm low (a 911 is taller – at 1303mm), 1999mm wide (911 is 1808mm) and 4850mm long, the most extreme four-door Porsche ever sits on a generous 2890mm wheelbase. This generosity is owed to the bonsai drivetrain which takes up so little space that the plug-in coupe has a second boot in the front, 911-style.

Mission E has a claimed aggregate power output of over 600bhp, split at 33%/66% between the axles. United torque is in excess of 738lb ft, which should be plenty to rush the four-seater from 0-62mph in under 3.5sec. The 0-125mph acceleration time is in the area of 12sec, while top speed is governed at 125mph. Did we hear you say 'so what?' After all, the most potent Tesla ▶



'It's a proper driver's car. It handles like a sporty crossover and the performance is amazing'

Five horizontal chrome grille bars will mark out all future electric Audis

Porsche's suicide rear doors would indeed be suicidal, cost wise

INSIDE PORSCHE'S MISSION E

On the face of it the layout is beautifully simple and adheres to the sacred Porsche principle of sweet balance. There are two permanent magnet synchronous motors, one driving the front axle and one the rear, and as you'd expect of Porsche the bias is heavily towards the rear. In fact, two-thirds of the drivetrain's combined output of 600bhp is directed to the rear axle. The electric motors, which also recover braking energy, are similar to those used on the Le Mans-winning 919, though this is their first iteration on a road car.

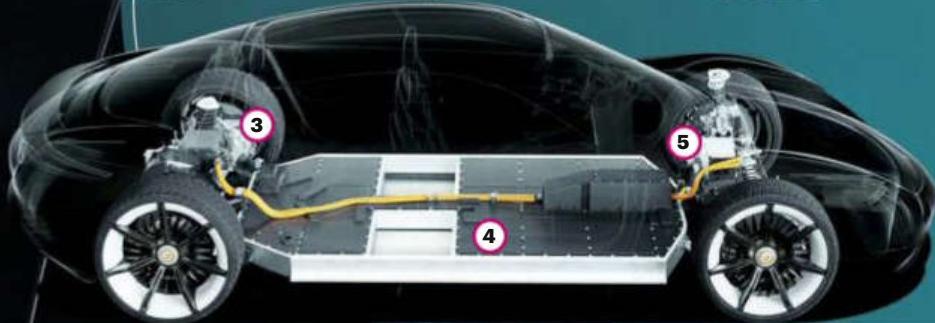
The drivetrain gives that typical EV character of single-gear instant

acceleration (0-62mph in 3.5sec) courtesy of 738lb ft of torque

Mission E is powered by an 800V propulsion system (way too juicy for the current charging network) which would allow an 80% recharge in 15 minutes. The battery packs are located underneath the floor, distributed front and rear, but with a gap just behind the front seats to create a legroom 'trench' for back-seat passengers. This allows decent rear headroom from a car with a swooping rear roofline that actually sits 3mm lower than a 911.

The cockpit features all the glass screens you can eat plus sci-fi spec 'Eye contact' reactive tech.

1. Main instruments display five readouts: Connectivity, Performance, Drive, Energy, Sport Chrono
2. Touch, zoom and swipe functions on central pad
3. Rear PMSM motor delivers 66% of the drive
4. Battery packs set low for best centre of gravity
5. Front motor drives wheels and recovers brake energy

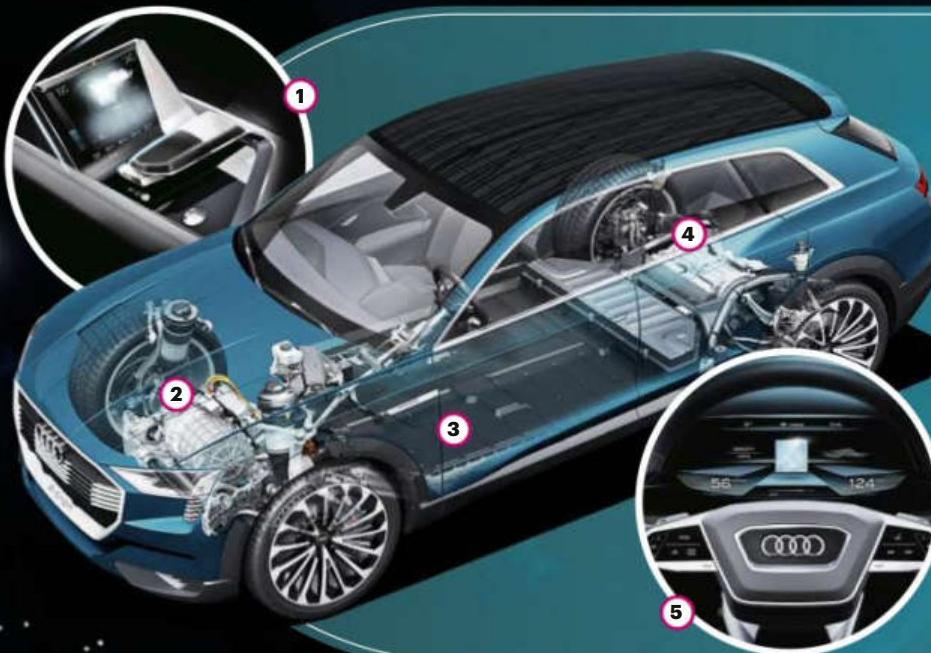


'Setting up our own infrastructure the way Tesla does won't enter the equation'



Lower than a
911 and twice as
sexy. If this is the
future, where do
we sign?

INSIDE AUDI'S Q6 E-TRON QUATTRO



Audi goes one better than Porsche with three electric motors – one at the front, two at the back – together producing 503bhp and 590lb ft of torque. The lithium-ion batteries offer a combined capacity of 95kWh and, like those in the Porsche, are made in Korea by LG and Samsung.

The Q6 has an innovative combined charging system which allows for quick charge (DC) or slow charge (AC). It'll take around 50 minutes to pack enough energy to offer 300 miles of zero-emissions range. The

battery pack is integrated into the floorpan to add structural rigidity, and is packed in an underfloor drawer so it can be easily accessed. The cells may be clean, but they add a frightening 650kg to the kerbweight, making the Q6 a 2.2-tonne porker.

Like the Porsche, the Q6 gives a hot-off-the-line, one-gear launchfest, but 0-62 in 4.6sec isn't quite as sharp as Mission E. Top speed is limited to 131mph.

Concept features radical OLED instruments, but they won't make production yet.

1. Central controller shuffles two gears – forward and reverse
2. Front motor drives front wheels and recovers brake energy
3. Battery pack part of the structure – also easy to access
4. Rear motors help achieve rear-bias. Rear wheels also steer
5. Instruments via organic light emitting diodes. Way ahead!



is a good match in Ludicrous Mode (0-62 in 2.8sec, 155 v-max). 'True,' admits project leader Stefan Weckbach. 'But our main emphasis is on repeat performance. The catchword is "reproducibility". Which is another way of saying that we won't tolerate the slightest degradation. Our car will accept and master the stopwatch challenge, time after time. Without losing its urge, slowing down, running out of stamina, struggling to meet the range expectations. This promise can be redeemed at random on country roads, the autobahn and even on the race track.'

The key to these ambitious goals is an innovative 800V propulsion system. Hooked up to the mains, the batteries – a joint venture with Audi – take only 15 minutes to recover 80% of their energy. Sounds intriguing, almost revolutionary. So why hasn't the competition thought of a similar solution? Because right now an 800V charge network exists only on paper. How is Porsche going to jump this hurdle? 'We are talking to politicians, to other brands, to specialist suppliers like ABB and Siemens,' says Müller. 'So far, however, progress has been frustratingly slow. There exists a plan to equip 50 autobahn filling stations with charge points, and yet I am sceptical because the proposed system is basic, slow and inadequate. True, our car could alternatively also be fed through a 400V wall box, but this would at least double the charge time. While cordless inductive charging is another option, setting up our own infrastructure

the way Tesla does won't enter the equation. In my view, we must pull together to make this work.'

The cutaway drawing of the Mission E looks remarkably like a Model S. No surprise – both vehicles use a similar layout featuring an underfloor power pack with a pair of small electric motors at each end driving all four wheels. To warrant a low seating position and a fast dropping roofline, Porsche invented the so-called foot garage, which forms a convenient transverse trench for rear-seat passengers. Despite the compact dimensions, the cabin is airy and spacious. Every occupant has a captain's chair, and there is no transmission tunnel dividing friends or family. With no propshaft to be stowed away and no engine to intrude, the new dashboard is much slimmer, and the fat centre stack has been replaced by a narrow flybridge.

The biggest of the three displays is the curved main instrument panel which shows five animated circular read-outs (Connectivity, Performance, Drive, Energy, Sport Chrono). Those who love to touch, zoom and swipe are invited to use the tablet-size control pad positioned north of the gear selector, again evoking shades of Model S. Across the entire width of the passenger-side facia, a holographic monitor is offering a selection of apps on a video conveyor belt. There is even more fresh digi stuff, such as a surprisingly intuitive multi-functional steering-wheel, the next iteration of gesture control and a new ▶

Audi is also considering a two-door coupe version to 'out-sport' X6 and Cayenne

The best news
is they're still
intended to be
great to drive. Too
good to be true?
Hope not



technology named eye contact. This employs a small camera which follows the eyes of the driver, even when he leans back or looks down. By also monitoring posture and seating position, the system automatically adjusts the main dials to match your field of vision. Unlike most other concept cars, Mission E isn't interested in autonomous driving. 'In a Porsche the driver wants to be in charge,' says Müller. 'That's why sports cars which do their own thing are not a high priority.'

Every design exercise has at least one eye-catcher; in the Mission E's case it's rear suicide doors. They look cute, and they work, but they also add weight, cost and complexity. Without B-posts, extensive reinforcements would be required to meet side-impact standards. Definitely shortlisted for production are the trademark four-beam headlamps, the filigree single-piece tail light and the La Ferrari-inspired doors which cut deep into the sills.

Unlike many rivals, Porsche has rejected the popular asynchronous electric motor in favour of permanent-field machines also known as PSM. Stefan Weckbach explains why. 'The PSM technology costs twice as much, but it is 20 to 30% lighter, and it heats up later and to a lesser degree. Together with the 800V system, PSM reliably prevents an early loss of power and is therefore vital to ensure the promised range.' Another key feature is active thermo management. Mission E entertains

TESLA: WE PLANNED TO START THIS EV WAR

Elon Musk, Tesla's founder, doesn't greet competition with dismay. Far from it, he's an evangelist. 'Hopefully in 2020, global EVs would be at least a few million a year,' he tells CAR. 'I've said Tesla wants to be past 500,000 cars annually by then. I hope we succeed. Then I'm sure there'll be increased activity by the car makers. Tesla's mission is to accelerate the advent of sustainable transport; hopefully the whole industry goes electric. I think the whole industry will go fully electric in the long run, whether Tesla was here or not. The fundamental of Tesla will be measured by what degree we accelerate that transition. There'll be the vehicles we make ourselves, but the vehicles we effectively induce others to make will have a far bigger effect.'

several cooling circuits to protect batteries, performance electronics and electric motors. When stationary, fans must cool down the most critical items. On the road, the active aero kit automatically channels the airflow through, past, over and under the vehicle. Keeping temperatures at a healthy level is essential for the longevity of the drivetrain and for that critical 'reproducibility'. Since batteries and software age fast, regular over-the-air updates are a must. What about the hardware, though? 'We looked at the battery swap principle proposed by Better Place,' recalls Müller. 'But in our case it does not make much sense to exchange discharged cells for full ones. Instead, we must find a solution to replace outdated or no longer functioning batteries quickly and economically.'

Better coordination and tighter budgets might have helped Audi and Porsche pool their BEV efforts. But with the Not Invented Here banner flying high in Ingolstadt and Weissach, there is very little tangible overlap between the two projects. This may change once the new VW top management beds in. In the wake of the Frankfurt Show, the plan was to build the Porsche in an existing German facility, most likely in Zuffenhausen. While Audi has increased its Q6 volume target from 30,000 to 45,000 units, Porsche has doubled its BEV sales projection from 10,000 to 20,000 cars minimum. A highly significant commitment to an automotive future which – #dieselgate notwithstanding – is changing before our eyes. 

Mission E isn't interested in autonomous driving. 'In a Porsche the driver wants to be in charge'



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NEW vs USED

New Mazda MX-5 vs Used Lotus Elise 111S

Mazda's latest roadster is the nearest thing to a modern-day Lotus. But a decade-old example of an *actual* Lotus costs the same. Proper dilemma!

Words Ben Barry | **Photography** Alex Tapley



THERE'S MORE THAN a little Lotus to Mazda's MX-5. The first generation picked up where the Elan left off in the '70s, combining affordable ownership, rear-drive dynamics and top-down windiness. The new fourth-gen MX-5 goes back to those roots: it weighs just 950kg, produces 129bhp or 158bhp from 1.5 or 2.0 naturally aspirated litres and, at £18,495, makes hot hatches look expensive.

Other than the complete lack of squeaks and rattles, the MX-5 could've been created by Colin Chapman himself. The things is, for £18k – or quite a bit less – you could get an actual Lotus. It's a brave buyer that forgoes Mazda's famously robust build quality and a three-year warranty for a decade-old Elise, but that doesn't mean you shouldn't.

We've sourced a second-generation Elise 111S from specialists Bell and Colvill. The 111S is essentially a regular Elise with a 36bhp hike to 156bhp, a couple of decals and some unique alloys. Prices range from £13k-£18k and this one's covered 30,000 miles since 2004, comes with a full service history and is up for £16,995.

Twist the unassisted steering and you immediately feel dialled in; the helm is incredibly light, and constantly tickles your hands with road-surface information. Despite picking up every nuance, the Elise is never nervous over cambered B-roads – the front tyres are skinny 175-section 16s – and while the suspension is firm, it still lets the 111S flow.

Like many Elises, this 111S's K-series engine breathes through an aftermarket Pipercross air filter, and it sounds fabulous: a deep bellow at lower revs that's lost under mechanical zinging towards the redline. This is more than enough power to have fun.

Yes, there are rattles – especially with the roof on – and it's easier to extract yourself from a post box than straddle that chunky sill, but the subterranean seats are snugly comfortable, and by this point the Elise had carpets, soundproofing, central locking and electric windows, while our car's air-con was optional.

The Mazda, of course, is the easier daily drive. You don't need limbo skills to get in, there's a boot you can use, and while the roof is manually operated, latching and unlatching is a cinch. Just don't expect a Merc SLK-style mollycoddling: putting the roof up on the motorway doesn't actually seem to reduce wind noise.

On the road, the MX-5 can't compete with the Elise's tactility, but it is a lot of fun. Point the steering at an apex and the nose takes an exaggerated lunge, but there's also channel-ferry body roll. You can use that roll to generate oversteer, but it does feel at odds with the keenness to change direction. 2.0-litre cars get sports suspension, which probably feels more cohesive.

The 1.5-litre's 7500rpm redline sounds promising, but the MX-5 gathers speed reluctantly, and there's no shift in character as the needle scrolls the dial. Despite the relatively close power-to-weight ratios, the Elise feels significantly more eager. The Mazda does boast the sweeter gearchange, though, has nice steering, and the pedals indulge heel-and-toe heroics. ▶

Mazda vs Lotus: the numbers

MAZDA MX-5 1.5 SPORT

- **Price** £21,495
- **Engine** 1496cc 16v four-cylinder, 129bhp @ 7000rpm, 111lb ft @ 4800rpm
- **Transmission** Six-speed manual, rear-wheel drive
- **Performance** 8.3sec 0-62mph, 127mph, 47.1mpg, 139g/km CO₂
- **Suspension** MacPherson strut front, multi-link rear
- **Weight/made from** 975kg/steel
- **Length/width/height** 3915/1735/1225mm
- **On sale** Now

LOTUS ELISE 111S

- **Price** £16,995 (2004, 30k miles)
- **Engine** 1796cc 16v four-cylinder, 156bhp @ 7000rpm, 129lb ft @ 3500-4650rpm
- **Transmission** Five-speed manual, rear-wheel drive
- **Performance** 5.3sec 0-62mph, 132mph, 40.9mpg, 163g/km CO₂
- **Suspension** Double wishbones
- **Weight/made from** 806kg/fibreglass
- **Length/width/height** 3785/1719/1143mm
- **On sale** 2002-2005



The lightweight, open-air ethos unites this pair, but there's no mistaking the gulf between the two driving experiences.

> SERVICING AND RUNNING COSTS

Elise servicing depends on whether you have a K-series Rover engine (as the 111S does), or the Toyota unit that replaced it. K-series motors adhere to 9000-mile/annual servicing, and are based on A (oil/filter, brake fluid), B (A plus air filter and spark plugs) and C (A and B plus fuel filter, cambelt, gearbox oil, aux belt). Bell and Colvill quote £371, £451 and £878 respectively. The sequence is AA, B, AA, C, repeat. For Toyota engines, expect a £377 annual service, plus an air filter (£90) at three years, coolant at four years (£118), and spark plugs and gearbox oil at six years (£222). The Toyota has a cam chain, not belt, lowering costs.

The MX-5 is based on annual or 12,500-mile servicing. A 12,500-mile service (oil/filter) typically costs £161, 25,000-mile-service (oil/filter, brake fluid and cabin filter) £270, and the 37,500-mile service (oil/filter, air filter) £192.

Based on a 40-year-old male, Adrian Flux Insurance quotes £225 fully comp for the MX-5, the Elise £265.

> RELIABILITY

Very low mileage Elises might not be the bonus you expect. 'Cars used consistently tend to have fewer issues,' explains Jamie Matthews at Bell and Colvill.

Both engines are robust, but the Toyota has the edge for frequent trackdayers. While a generally strong unit, the K-series head gasket is a weak spot; look for dipstick mayonnaise, and a creeping temperature gauge.

On all Elises, check for poorly repaired accident damage, and also the paint: it's water-based, the body fibreglass, and can freeze and blister. Headlamp lacquer can also delaminate. Air-con was optional, but check it blows cold; the sill pipe can corrode, a circa £600 fix. No matter how good

your car, you will get squeaks and rattles; after two miles the heater knob on our car threw itself into the footwell.

The MX-5 comes with a three-year, 60,000-mile transferable warranty, and extended warranties offer three levels of cover: Essential, Elite, Complete. Costs depend on the level of excess. Visit mazdaextended.co.uk.

> KEY OPTIONS

Elise 111S options were limited to a radio/cassette/CD changer, air-con, black eight-spoke alloys, and metallic/custom paints. An alcantara interior was no-cost over standard leather. A hard-top and 'thermal' black soft-top were standard, the latter available in red, blue or green at extra cost.

The MX-5 comes in five specs: SE (£18,495, 1.5 models only), SE-L (£19,245), SE-L Nav (£19,845), Sport (£21,845) and Sport Nav (£22,445) – add £850 for 2.0 models. Spec is engine-dependent: 1.5s get 16-inch alloys, 2.0 models 17s, limited-slip diff and strut brace, and you can't upgrade. Sports suspension is standard only on 2.0 Sport and Sport Nav, and unavailable elsewhere.

All models get LED headlights, but rain-sensing wipers, adaptive auto

THANKS: BELL AND COLVILL (BELLANDCOLVILL.COM, 01483 281000)

MY LOTUS ELISE 111S

JON EDWARDS

'After many other Elises I recently returned to a 2002 S2 111S. I love the K-series engine, the long third gear that just keeps giving, the steering and handling and the fact the mpg is so good. Cons? The standard exhaust and airbox are too quiet, paint micro-blisters can be an issue and the heater control units are a weak point and expensive to fix, but DIY is possible. But the 111S is the best model for road use, and it's so much fun you'll find yourself laughing out loud at times.'

MY MAZDA MX-5

CLIVE SLOMAN

'I ordered my MX-5 a year ahead of its launch and I think my dealership, Donalds Ipswich, were as excited as me! I own a top-spec 2.0 Sport Nav in Soul Red and commute daily. I've only had the car for a month, but I'm already up to 1500 miles. The car genuinely feels like it's on rails and I smile from the moment I get in to the moment I leave. I want more time to drive it! I love the GT-esque soundtrack, the BOSE sound system is the best I've ever had, and the LED lights are brilliant. It's truly special.'



headlights and rear parking sensors are reserved for Sports. Sat-nav features on, yep, 'Nav' models, with the option to upgrade to a 'premium connected' version.

Arctic White is no-cost, Soul Red Metallic £660, everything else £540. Upgrade to Sand leather for £200 on Sport Nav models, and 2.0 Sport Nav models can be optioned with a Safety Pack (high-beam control, blind-spot monitoring) for £350.

>VERDICT

The Elise 111S puts much of the fun of a Caterham into a safer, more useable package. Values are firm, and the usual pitfalls of Icon Buyer pairings – that the used car is significantly thirstier and harder on its costlier consumables – vanish here.

With Mazda's finance options, you'd spend about £3.8k annually (£4k deposit, £12k split over 42 months), then return the MX-5. Buy this 111S and you'll get a one-year warranty, and it'll retain a chunk of its £17k over the same timeframe. Why not allocate those gone-for-good finance payments to a kind of reverse swear jar for the Elise? It breaks, you swear, remove future residuals for repairs...

For some, the fact it's give-or-take whether a decade-old car is cheaper than a new one will sound like man-maths gone mad. The MX-5 is an enjoyable drive, it's the more sensible daily driver, you know your costs up front, and you'll get to work every day.

It's a dilemma best solved thus: only car? MX-5. Weekend toy? Elise.

• @lamBenBarry



Elise rattles less with the roof off; MX-5 is equally noisy with roof up or down (but manual roof is sooo easy to operate)



MY PERSONAL ICON

BMW M3 CSL

Andrew Wolton and his rapid – and rapidly appreciating – E46 M3 CSL



>'I'M BY NO MEANS A

lifelong BMW fan. I'd had a couple of Lotus Elises and I wanted something faster, to help me develop as a driver. I had a budget in mind and was flicking through the classifieds when the CSL jumped out at me. I did a little more reading and warmed to the idea – the CSL had some very positive press reviews, and what really swung it for me was the performance for the money. At the time a lot of magazines were comparing the BMW M3 CSL to the Porsche 996 911 GT3 RS, with the BMW holding its own while being a third less expensive to run. I bought my current example for about £29k.'

>'IT'S FANTASTIC TO DRIVE.

The SMG gearbox came in for a fair bit of

criticism, and there's no doubt it feels crude compared to the latest dual-clutch transmissions, but I've never had a problem with it, and I think the fast, hard upshifts suit the car's character and sense of occasion. It also gives the car real versatility. I went to the British GP a couple of years ago, picking a friend up on the way down, and we just cruised to Silverstone with the transmission in automatic. On the way back, inspired by the F1 drivers, we went a bit quicker, and with the noise and the furious acceleration, my friend couldn't believe it was the same car! CSLs are great on track too. This is my second CSL and I did a few trackdays in the first one, including a trip to the Nürburgring. It's a really confidence inspiring track car; quick but neutral and friendly at the limit.'

>**'VALUES ARE SOARING.'**
Immaculate examples are going for £60k. But I won't be selling mine any time soon. What would I replace it with? I love the way it blends in like a 3-series, but when you're in the mood it's visceral and alive. BMW described it as a 110% car – they pushed every aspect of the M3 another 10% – and for me that's how it feels.'

The open-air ethos unites them but there's no mistaking the gulf between the driving experiences



PERSONAL DEALER

The best Hondas in the world

Stuart Pridham runs the Civic Type R Owners Club, the largest in the world with more than 53,000 members. We asked him to pick his top three Type Rs. Interview by **Ben Whitworth**



£4.5k-£6k, 1995-1998 | Integra Type R (DC2)

1797cc 4-cyl, 190bhp, 6.5sec 0-62mph, 145mph

Is this a good idea? 'The DC2 Type R is widely regarded as the finest handling fwd car ever built. It really is that good. It was stripped of much of its sound-deadening so it was very light and it was powered by a hand-assembled engine, with hand-polished intake ports and molybdenum-coated aluminium pistons. A limited-slip differential was standard. It really is the purest of driving experiences.'

How much? 'Due to their declining numbers the DC2 is becoming a rare and highly sought-after model. As always, the more you spend the better, and look for models that haven't been tuned, tracked or bent. Bank on £4.5k-£6.5k to net a good one.'

What's going to break? 'Reliability has always been a Honda cornerstone, so the trick with the DC2 is look for one that has been meticulously maintained from the start. Key items to check include the following: groaning LSDs which will benefit from an oil change; blue smoke when the VTEC kicks in caused by hardened valve stem oil seals; and make sure the cambelt has been changed religiously every five years or 60,000 miles. Oh, and make sure the red ignition key is present as it houses the immobiliser.'

Crippling running costs? 'Not at all. Budget on £150-£250 for the minor annual service and £500 for the major biannual service. Replacing the timing chain will cost £1000.'

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£5k-£6k, 2005

Civic Type R Premier (EP3)

1998cc 4-cyl, 197bhp, 6.6sec 0-62mph, 146mph

Is this a good idea?

'Affordable, dynamically brilliant. The best selling Type R ever, for good reason.'

How much?

'The one to have is the 30th Anniversary Premier model. You won't see much change out of £6k for a solid example.'

What's going to break?

'Dampers can show excessive wear, suspension geometry must be spot on, and erratic revs/iffy idle speeds means the idle control valve needs a clean.'

Crippling running costs?

'Budget on £250-£400 a year. Excellent reliability, economy and servicing costs.'



£8k-£15k, 2009

Civic Type R Championship White (FN2)

1998cc 4-cyl, 198bhp, 6.6sec 0-62mph, 146mph

Is this a good idea? 'Yes! Comes in Honda's iconic race hue with standard LSD.'

How much? 'You'll need deeper pockets for the final-fling FN2. £8k will get you a baggy high-miler, £15k for a tasty showroom-ready example.'

What's going to break? 'Very little. Check for blue smoke, and rust on the top corners of the doors. Thin water-based paint chips easily - check front closely.'

Crippling running costs? 'There are plenty of Type R specialists out there, so £250-£400 a year should cover you.'

NOW WITHIN REACH

Vauxhall VX220 Turbo

Vauxhall's warp-speed VX220 Turbo is now an affordable nailed-on classic in waiting

WHEN IT ARRIVED in 2000 the VX220 was a sensational driver-centric revelation. Not since the Lotus Carlton did the Griffin badge look so sexy and desirable. While the torquey nat-asp 145bhp 2.2-litre model was indecently quick, it was the 200bhp turbo that got us all frothy - we crowned it our Car of the Year in 2003.

BUILT BY LOTUS, the VX used the Elise's basic aluminium tub but only 10% of components were shared. The 875kg VX sat on a 30mm longer wheelbase with 20mm wider rear track, boosting stability and composure.

One
we found
2004 VX220 Turbo,
35,000 miles, metallic
black, black alloys,
£12,995



DON'T THINK that because it wears a Vauxhall badge, and has anti-lock brakes, airbag and air-con that the VX220 Turbo was a pussycat. It was a visceral beast that cracked 60mph in sub 5sec and delivered mid-range punch to shame bona fide supercars.

THAT SEARING pace was matched by equally engaging dynamics: the unassisted steering was precise, accurate and feelsome; the ride quality possessed that magic Lotus quality; and the brakes were heroic. So, a Vauxhall-badged supercar-baiter for the price of a new Fiesta...

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OUR CARS.



How we specced our 650S

STORM GREY WITH ORANGE CALIPERS

More extrovert colours are available but metallic Storm Grey (a £1820 special colour) suits the 650S. An Elite shade costs £4090, orange calipers a further £910.

SPORTS EXHAUST

We spent £4790 on the sports exhaust to silence the turbo haters. No power increase but it saves weight and pumps up the volume. Drop the rear window!

HEATED MEMORY SEATS, SEMI-ANILINE LEATHER

Three memory pre-sets and the heat to make every day a roof-down day for £2730. Semi-Aniline Sports option replaces alcantara with perforated leather (£2730).

DIAMOND CUT WHEELS

A £1550 finish option on the standard forged five-spoke wheels, for a flash of, er, flash. This being England, we've swapped standard P-Zero Corsas for P-Zeros.

Our McLaren. Has a nice ring to it, no?

Turn up on the train, leave in a 650S Spider. Pinch me. **By Ben Miller**

HELLO
MONTH 1
McLAREN
650S

YOU HAVE TO hand it to them, they're good. You could step from your train at Ascot station, stroll the 50 yards between the platform and the UK's latest McLaren dealership and step through the door completely indifferent to Britain's pre-eminent supercar maker, but five minutes later you'll be considering a McLaren Qualified (approved used) 12C, buying the subtly branded weekend bag to slip into its nose and mentally re-decorating the garage at home with Can-Am orange walls, a print of Senna at tenths in his MP4/4 on the wall and a polished stone floor so flawless Ron could check his hair in it.

Surreally I'm here to pick up a 650S Spider, mine for the next six months, but so distracting is this shrine to Bruce's fast car legacy that I fear a half-hour job is going to consume the day. Opened earlier this year, McLaren Ascot glows with the same purposeful ambition evident in the Woking firm's plans for global supremacy. Not all that long ago the 12C was the company's first wholly McLaren car since the F1. In the four years since the 12C's launch we've had a beautifully judged evolution, 650S, a couple of game-changing hybrid hypercars, P1 and P1 GTR, and more recently the awesome 675LT and aggressively priced 570S. At Ascot the team's straining at the leash; evangelical about the product, keen to provide the kind of service the cars deserve and fired up by the new era of increased volume 570S will usher in.

Of course there's time for a little of the past alongside the future, and at Ascot it's all there in an artful collection of prints above the coffee table. The '95 Le Mans-winning F1 GTR. Prost and Senna in Marlboro red and white at Monaco. The raging Can-Am cars. Fittipaldi's Texaco M23. The Yardley M19. A monochrome shot of Lauda and Dennis on their way to the '84 driver's title with the MP4/2. The images speak of a glorious racing past, of enigmatic drivers, wondrous cars and sheer read-it-and-weep statistics. Stuff like eight constructor championships and 12 drivers' titles in Formula One and an outright Le Mans win, with a GT car, at the first time of asking. An example of the remarkable F1 GTR sits in the showroom, an outrageously liveried pink-and-black Lark-sponsored car, part of the squad that brought home the bacon in the '96 All Japan Grand Touring Car Championship. Window displays come no more magnetic.

Outside sits the Qualified stock, a rainbow range of 650S and 12C coupes and Spiders, with prices from 'just' £125,000. Qualified cars are inspected and prepared by McLaren technicians, sold with a 12-month warranty (you can upgrade to 24 months) and run the latest software upgrades. McLaren released several in the wake of the 12C's initial launch, boosting power (from the original 12C coupe's 592bhp to the Spider's 617bhp across both variants), delivering a more intuitive and reliable version of the IRIS interface and bringing the 650S's active aero functions to the 12C's airbrake (auto-DRS at throttle openings of 80% or more, and angle adjustments to help stabilise the car when cresting sharp rises or braking hard). A 2012 12C coupe in McLaren orange catches my eye, at £126,950. I'd ▶



1 Button-free wheel epitomises chic minimalist cabin. We have arrived



CARBONFIBRE EVERYTHING

We've broken up the expanses of grey bodywork with carbon sills (£2680), front air dam/rear bumper (part of an £8470 package) and wheelarches (£2280).

PARKING SENSORS AND CAMERA

General visibility is good, but you'd have to be braver than us to reverse without these face-saving trinkets (£1030 for the camera; £1640 the sensors).

WAYNE LENNON

Coupe or Spider?



GO COUPE and you pay less for a lighter car. Base price is £198k for the coupe and £215,520 for the Spider. While the roof isn't part of the carbonfibre tub, and therefore needn't be compensated for structurally in the Spider, the folding hardtop adds 40kg, or half a passenger. Yes that weight's carried high, but 1370kg is a trifle when you've 641bhp and 500lb ft to move it.



GO SPIDER and you also sacrifice a little internal storage space; the coupe boasts a handy shelf behind the seats. But the appeal of the Spider is obvious. Dropping the roof adds another dimension to the 650S's driving appeal for little tangible dynamic penalty, and the car's arguably a more striking shape with the roof down. 80% of the 650Ss McLaren sold last year were Spiders.



struggle to raise a tenth of the asking price but, given the 12C's rarity at fewer than 5000 units worldwide, and its importance as the first car of McLaren's post-F1 renaissance, used buys surely come no smarter.

From the showroom a widescreen window lets you peek into the workshop, which is every bit as clean and as ordered as you'd imagine.

Today – and I'm assured they're not just for our benefit – not one but two P1s sit ready for expert attention. Ascot's aftersales manager and hugely experienced McLaren spannerman Ben Bradford is as happy elbows-deep in a hybrid P1 as he is in the BMW-powered F1, which Ascot also service from time to time. Up on another ramp a 12C undergoes a routine service, its drag-cheating fully faired floor clear to see. And there, undergoing final checks, is our 650S Spider.

Despite the distractions, I spot it immediately. And while I'd love to be able to say I play it cool as a cucumber, acknowledging the car with a polite smile before getting down to the paperwork with sales executive Pete Sanderson, the truth is my face lights up like I've just been dealt a royal flush, my heart thuds in my chest like a cricket bat in a washing machine and my imagination immediately vaults ahead to a summer of roof-down bliss, sun-kissed trackdays and the higher state of being that comes with using a machine of such prodigious talent as an everyday tool.

Paperwork signed, it's out to the car for a briefing. Gone is the 12C's Jedi hand-swipe door release, replaced by an altogether easier, if less theatrical, rubber button. Up lifts the butterfly door on its perfectly judged strut and in I slide, getting comfortable in a car I'll soon be hopping in and out of as a matter of routine. Wide sills mean there's an art to roof-up entry, but getting in and out with the roof open is as easy as dropping into a 641bhp bathtub.

Pull the door shut, tug on the smaller stalk beneath the indicator for comfort entry and the seat whirs back into position. Far from feeling cool and standoffish, the cockpit's beautifully



To be fair, Pete was just as charming after the credit check

hewn minimalism is welcoming. The steering wheel is free of buttons. Behind it the cast metal indicator lever and gearshift paddle are delightfully cool and solid to the touch. The IRIS system is as intuitive as its screen is clear. With faultless logic, each occupant gets their own climate controls, on their respective door. And on the centre console you're drawn to the Active Dynamics panel, the key to the 650S's versatility. Start the car and Active Dynamics default to the Handling and Powertrain to Normal, the safest of the three settings, regardless of the position of the switch. Push the Active button and the three-position switches go live, as do the Aero (activates the rear wing/airbrake's active aero) and Manual buttons (switches from auto shifting to manual) within them. Semi-recumbent in the beautifully contoured seats, elegant wheel rim grasped in sweaty paws, this finally feels real.

Running the 650S for six months is the McLaren's shot at righting a few wrongs. The car launched to critical acclaim and very nearly won our sports car giant test last year. In the final reckoning the 650S Spider claimed bronze, losing out to the Porsche Cayman GTS's unrivalled value for money and the Ferrari 458 Speciale's raw, heart-rending brilliance. But the judges raved about the McLaren's broader remit, its Lotus-esque ride and handling and its mighty torque-rich twin-turbo engine. No-one would dream of running a 458 Speciale as an everyday car, but with its greater refinement, flawless ergonomics and versatile Proactive suspension, the 650S promises to be a supercar you can use like a supermini. Testing that promise is going to be quite a privilege.

With the Nav set to a tasty but ludicrously circuitous route home I click into first and, with a blare of rich V8 noise, pull gently onto the road and into an ordinary Monday afternoon, the McLaren at once as civilised as a Mercedes and as special as a Veyron. I could be very happy here.

Shop window displays come no finer than this



LOGBOOK McLaren 650S SPIDER

► **Engine** 3799cc twin-turbo V8, 641bhp @ 7250rpm, 500lb ft @ 6000rpm ► **Gearbox** 7-speed auto with paddleshift ► **Stats** 3.0sec 0-62mph, 204mph ► **Price** £215,520 ► **As tested** £251,080 ► **Miles this month** 575 ► **Total miles** 575 ► **Our mpg** 17.1 ► **Official mpg** 24.1 ► **Fuel this month** £178.34 ► **Extra costs** £0



Whybrid, more like

Adding extra motors and extra weight isn't saving the planet – or helping the driving experience. By Greg Fountain

MONTH 4
LEXUS
NX300h

be shrugging even if we'd hit the claimed 54.3mpg. In fact the NX is only fifth in our long-term fleet mpg table. At this rate it might miss out on the play-offs.

One of the NX's problems, like all battery afflicted models, is weight. At 1785kg it's 250kg porkier than the diesel RAV4 – the Toyota group product with which it shares a smattering of structural components. And the RAV4, despite no hybrid to excite Leonardo di Caprio, still claims 49.6mpg. Hardly a gulf in ambition.

From a driver's perspective, the NX is a puzzle. Motive power is provided 90% of the time by the 2.5-litre four-cylinder petrol engine, with occasional support from the front-mounted electric motor and very occasional support from the other electric motor at the back. There are three drive modes: Eco, Normal and Sport. In the first two modes the large dial on the left is a windy looking drivetrain status display, with a needle that flickers between Charge, Eco and Power like a Fukushima Geiger counter. Impossible to decode. Your best bet is to ignore it and concentrate on modulating the throttle, but trying to squeeze out a smooth flow of power is genuinely tricky. If your input is too gentle there's no urge whatsoever; too firm, and the CVT 'box sends the engine bananas, without any great sense of accelerative pay-off. That the NX is slow I can cope with, but it simply refuses to reward sympathetic inputs.

Pressing the Sport button helps. It makes you feel instantly more in tune by swapping the Geiger screen for a proper rev-counter, and adds to the mood by back-lighting the clocks in red. More importantly, it sharpens up the throttle mapping and speeds up the gearchanges, making the car easier to drive and much more rewarding. But if you're going to do that you're surely better off with a straight diesel.

A conundrum then. It's lovely inside, but if passengers spend all their time questioning your driving ('are you ever going to change gear, mate?') the effect is lost.

Greg Fountain

LOGBOOK LEXUS NX300h PREMIER

► Engine 2494cc 16v 4-cyl, 153bhp @ 5700rpm (195bhp with electric motor), 148lb ft @ 4200-4400rpm ► Gearbox Electric CVT, four-wheel drive ► Stats 9.2sec 0-62mph, 112mph, 121g/km CO₂ ► Price £42,995 ► As tested £44,640 ► Miles this month 1305 ► Total miles 6263 ► Our mpg 38.4 ► Official mpg 54.3 ► Fuel this month £135.76 ► Extra costs £0



From the driving seat

⊕ Cabin so nicely made you can forgive it anything
⊖ Shouty, whiny drivetrain less charming than Katie Hopkins
⊕ Chassis superbly composed for an SUV
⊖ Touchpad touchier than Jose Mourinho

Her ups, her downs, her smiles, her frowns...

MONTH 8
CITROËN C4 CACTUS

NOT, TO MY eye, that the Van der Graaf Cactus is going to promote a sudden upsurge in the fortunes of any ship yard near you in the immediate future, but, to paraphrase Rex Harrison's resolutely un-sung sentiments in *My Fair Lady*, 'I've grown... accustomed to its face.'

I'm unsure whether or not it's down to designer Mike Lloyd's determination to eschew all convex surfacing but, if you can get beyond the horse-peep-yellow couture, there is something indefinitely yet fundamentally pleasing about the Cactus's appearance. As with the first Bangle 7-series, it has, I suspect, much to do with delicious proportion desperate to throw off the shackles of hit-and-miss detailing. If only, for instance, the 'Air Bump' panel was less appliquéd and more integrated in appearance.

Sadly, life on board does continue to elicit rather more exasperation than enthusiasm; the piecemeal exile of switchgear in favour of a catchall touchscreen, for example, a particularly deceitful purse-string-driven flattery which we fell for only as long as it took to discover that old-fashioned knobs and knockers are infinitely faster, easier and, let's face it, more pleasing to get to grips with on the move.

Citroën is, of course, far from the only culprit in the context of this burgeoning, bung-it-all-on-the-wiring-loom fad. But it has here proved all too clearly that if you are going to ask your customers to embrace this approach to instrumentation, you've really got to get it absolutely, incredibly right.

ANTHONY FFRENCH-CONSTANT

From the driving seat

⊕ Absence of switchgear promotes interesting design
⊖ Clumsy touchscreen promotes disgraceful language
⊕ Rear seats up and down like a hermit's fist of late
⊖ Rear seat release mechanism awkward for one



LOGBOOK CITROËN C4 CACTUS BLUE HDI 100 MANUAL FLAIR

► Price £17,990 ► As tested £19,330 ► Miles this month 518 ► Total miles 6593 ► Our mpg 54.2 ► Official mpg 83.1 ► Fuel this month £45.71 ► Extra costs £0



Three cylinders and a boat

Our Twingo is not the quickest car in the world, but will its performance be improved by what is effectively a sail? To the river! **By Mark Walton**

MONTH 6
RENAULT
TWINGO

IT PLAYED HAVOC with the aerodynamics. It felt like I'd attached a sail to the roof, or a parachute; as if at any moment it might lift the car like an empty plastic bag in a breeze, and swirl it into the air to get tangled in a streetlight.

Directional stability was also affected, the steering wheel jinking left and right as the crosswinds grabbed a hold of us, like a toy car with a handle on the roof. I can see why Renault doesn't offer a five-metre Canadian canoe as an option on the Twingo.

However, they do offer roof bars! True, the roof in question is as big as a hand towel, but just because it's small doesn't mean the titchy Renault can't go on big, round-the-world adventures. Imagine: a glovebox full of exotic maps; the roof loaded high with camping equipment like an old Land Rover on safari; and

the little three-cylinder engine groaning and wheezing with the effort. The Himalayas would be an entirely first-gear affair, but the Gobi Desert would be a piece of cake.

Sadly, without a six-month window in my diary and with half the world in some kind of horrific civil war, I couldn't go on a round-the-world trip this time; but those roof bars kept staring at me in the Twingo brochure, whispering 'Use me! Uuuussse meeaaaa!' So I decided to do what I always do whenever civilisation is threatened, society is crumbling and the world is sliding into geo-political disaster: I bugger off on my boat.

I've owned this canoe for over a decade now, and it comes out regularly each summer. It's a five-metre-long Old Town Charles River, made out of a material called 'Royalex', which feels like washing-up-bowl plastic but is actually a fancy composite devised by UniRoyal in the 1960s. Light and strong and capable of recovering from dents, it was used in a Ford concept car in 1965, the pretty 'Bordinat Cobra'. But it proved too expensive for big items, so it's been mainly used for canoe hulls ever since – though I hear Royalex production has ceased now,

We paid £150 for that 'retro' side decal, and now it's totally overshadowed



1
The genius of it is
that the approved
roof bars actually
corrupt the door
seals

2
So, will he bang
his head on the
half open hatch lid
or on the canoe? A
fiver says canoe



6 totally pointless options

Twingo roofrack? Pah! Behold the 189mph towbar...



FERRARI FF WOODEN DOOR HANDLES

Seriously! The Ferrari website has a whole section dedicated to wooden options for your FF. It's high-tech meets 1974 Humber Sceptre.



KOENIGSEGG ROOFBOX

Made by Thule for the 1100bhp Agera R, the 'Lightning' roofbox can handle 186mph, in case you're in a hurry to reach the static caravan park.



AUDI RS6 TOW BAR

Poor horse – bewildered by the 0-60mph sprint in just 3.9sec, it practically chokes on its hay when it reaches the 189mph top speed.



ROLLS-ROYCE LEATHER COOL BAG

Phantom owners, you could go to Argos and buy a regular cool bag for £13.95, instead of buying the official Rolls accessory... for almost £4000.



ARIEL ATOM WINDSCREEN

Who doesn't understand the Atom is about wild discomfort? Fitting a screen is like trekking through the Ecuadorian rainforest, and packing slippers and a onesie.



MERCEDES-BENZ INTERIOR FRAGRANCE

M-B's 'Air Balance' is a pricey way to make your car smell like a minicab. Choose 'Downtown Mood' for a 'transparent floralcy of jasmine and lilac over warm musk.'

because of the low volumes. Shame. When this one breaks, my next boat will have to be made of real washing-up bowl plastic... made from real washing-up bowls.

Anyway, the Renault roof bars cost £112 and they're unlike any bars I've ever fitted before. They wrap around the roof and grip inside the door frame with the help of small pins, which locate in four corresponding holes (holes you'll find in all Twingos, if you open the doors and look). Once tightened, the bars bear the cargo on big pads that sit on the edges of the roof – the instructions say they're rated at 60kg total (including the aluminium bars). Bizarrely, the bars interfere with the door seals, making the rubber curl up at the tops of each door. These bars are definitely a temporary, get-the-job-done-and-then-take-them-off-again attachment – I imagine the doors would leak in a downpour. ▶

The bars also look ridiculous with nothing on them. Around 80cm across and just 70cm apart, they make the car look even more like a yellow shopping trolley, now with rails to push; but with the boat loaded up and strapped down, I thought the car looked truly magnificent. The Twingo is only 3.6 metres long, almost 1.5 metres shorter than its new, bright red accessory, but I thought it carried it off with a graceful pride.

I've been on some long river adventures in the canoe, including paddling from Lincolnshire all the way to the Wash a few years ago; but this weekend it would be a short day-trip down a local river. So we headed for the water, and straight away the canoe on the roof made itself known. Apart from the rustling wind noise, and the feeling like the car might take off at any moment, there was also a marked dulling effect on the performance. With a kerbweight of just 865kg and a torque curve like a felled tree, the normally aspirated Twingo SCe 70 is the sort of

car that's very susceptible to weight changes. Empty the door pockets of sweet wrappers and you'll feel it perk up; drive it after eating a full English breakfast and you're buggered. So a 28kg canoe on the roof, plus the bars, the paddles, the picnic and the three of us, was bound to dent the already un-blistering 0-62mph time of almost 15 seconds.

Oh, and the turning circle. It also affected the turning circle.



Because... well, look at it.

But we reached our river at a leisurely pace with no scary U-turns, and we had a wonderful day. If there's one thing that can be said for the Twingo, it is a 'feel good' car. While it was conceived as a humdrum city car, it manages to rise above its boring domestic duties with a dose of cheeky charm. It's got character, and I like that. The roof bars – and a canoe on the roof – can't help but widen its appeal. And lengthen it quite a lot too.

•@markwalton

LOGBOOK RENAULT TWINGO PLAY SCE 70

> Engine 999cc 12v 3-cyl, 69bhp @ 6000rpm, 67lb ft @ 2850rpm **> Gearbox** 5-speed manual, rear-wheel drive **> Stats** 14.5sec 0-62mph, 94mph, 105g/km **> Price** £9995 **> As tested** £10,585 **> Miles this month** 649 **> Total miles** 4447 **> Our mpg** 38.4 **> Official mpg** 62.8 **> Fuel this month** £82.36 **> Extra costs** £0

The Twingo is almost 1.5 metres shorter than its new red accessory



Aquatically speaking, we're all set for the river; dynamically, we're up the creek without a paddle

We like red, but we're on our own

MONTH 7 FORD MONDEO

SIX MONTHS and almost 10,000 miles after the Mondeo joined us, I'm starting to notice more of its brethren on the road. But not one of them has been coated in the rather fine Ruby Red metallic our car wears. It makes sense to specify bright colours for test cars – it helps them pop out of photographs, but often leaves you driving a car you wouldn't even consider buying. But in this case, the red really makes the best of the Mondeo's starched-collar lines. It'll be interesting to hear from our local Ford dealer whether it's a trifle too sudden, and might actually hurt the resale values. We'll find out when it goes in next week to have the jammed sunroof and mysterious underbody rattle attended to.

Those other Mondeos we've seen are mostly wearing puny 16 and 17in wheels,

rather than the optional 19s on ours. These are predominantly reps' cars after all, and big rims cost more and hurt fuel consumption to the tune of 1.2mpg and 2g/km of CO₂. Sounds inconsequential, until you remember our average is still hovering below 40mpg, despite what the optimistic trip computer would have us believe.

The ride is surprisingly good on the 19s, but as we've mentioned previously, the new Mondeo feels considerably less taut than the old one, and there's no adaptive damper option to firm things up. However, it turns out that there is a sports suspension option, again with fixed-rate dampers, available at extra cost. Check back next time to see how it compares.

CHRIS CHILTON @chrischiltoncar

LOGBOOK FORD MONDEO

TITANIUM 2.0TDCI

> Price £26,865 > As tested £31,135 > Miles this month 1398 > Total miles 9857 > Our mpg 38.5 > Official mpg 56.5 > Fuel this month £185 > Extra costs £0

Optional 19s screw your mpg but improve your image. Your call!



From the driving seat

+ Impressively hushed cruiser - Disappointingly American interior trim + Massive cabin space... - ...but boot space only fair + Strong mid-range punch... - ...but not great on fuel - It's a big car with a big turning circle. Optional parking sensors a must



Safety first – literally

Pressed into Safety Car duty on BTCC weekend at Oulton Park, our G40 crosses the line first. By James Taylor

MONTH 6
GINETTA
G40 GRDC

A SPOT OF roof-mounted moonlighting for our Ginetta earlier this summer, as it became an official British Touring Car Championship safety car at Oulton Park. Every BTCC event includes a cast of support races, each with their own on-brand course car – a Clio for the Clio Cup, a 911 for the Porsche Carrera Cup and so on. The two Ginetta championships on the BTCC tour are no exception, hence a casting call for our G40. Numberplates off, orange roof lights on (nicely accessorised with the livery), Safety Car decals over the race numbers and hey presto, race car becomes safety car.

Apart from an excuse to blast the G40 to Cheshire and back, this little venture could answer a question I've pondered for some time. What does a safety car driver actually do all day? At each BTCC round that man is Scott Stringfellow, a former single-seater racer and a safety car pilot for 11 years. 'I feel I'm a quicker driver now than I was when I was racing,' he says. 'Because I've got used to driving in really crap weather. Part of my job is to read the track, feel the grip, and advise race control if a corner's dangerous so they can stop the race or put it back.'

He and co-driver Pete Harris (who operates the radio, acting as the go-between between Scott and race control) spend each race weekend leaping between four different course cars, under the cosh of ever-tightening TV coverage timings.

Our car's job was to lead the Ginetta Supercup and Ginetta Juniors (G40s almost identical to ours, driven by ambitious, fearsomely quick 14 to 17 year-olds) to the grid ahead of each race, and stand by to be scrambled in the event of a serious accident. 'There's no way of predicting if we'll be called out,' says Scott. 'Some weekends we're out all the time, some hardly at all. But it's rare we never get out all...' True to form, in the final Ginetta Junior race of the day our G40 gets its moment of glory leading the pack after a hefty (happily non-injurious) car-barrier interfacing moment. The race finished under the safety car so, not for the first time this year, our G40 crossed the line first. I felt oddly proud.

@JamesTaylor_5



Does anyone have a trick for getting really sticky stickers off?

LOGBOOK GINETTA G40

GRDC

> Engine 1800cc 16v, 135bhp @ 5000rpm, 110lb ft @ 4500rpm (est) > Gearbox 5-speed manual, rear-wheel drive > Stats 6.0sec 0-62mph, 130mph > Price £39,960 > As tested £35,940 > Miles this month 318 > Total miles 4015 > Our mpg n/a > Official mpg n/a > Fuel this month £64.90 > Extra costs £0

COUNT THE COST

Cost new £58,150
(including £6475 of options,
before £5k subsidy)
Dealer sale price £32,590
Private sale price £31,275
Part-exchange price £29,080
Cost per mile 10.0p
Cost per mile including depreciation £1.79



We cannot learn without pain

Aristotle said that. And after a year on the V60 Hybrid learning curve, we know what he means. **By Phil McNamara**

GOODBYE
MONTH 11
VOLVO
V60 HYBRID

packed with tech and costing a princely sum: £51,675 before options (and before taking off its £5k green car subsidy).

Its parts are dominated by a fiendishly complex plug-in hybrid drivetrain, enabling electric rear-drive, five-cylinder diesel front-drive, or both for all-wheel drive. Volvo lauds electrification's performance (as well as ecological) benefits, and boosting 325lb ft of diesel grunt with a 148lb ft electric motor makes for a punchy mid-range. But the two-tonne weight, supersized by 300kg of batteries, means it's not as spritely as 6.1sec 0-62mph suggests.

More impressive is the sophisticated integration of the power sources. In Hybrid mode, an urban journey starts with pure electric, diesel powers you up a motorway slip road, then EV resumes to maintain a quiet cruise. Kick down and you unleash



MARK RICCIANI

the diesel-electric full monty. At times you feel a tug on the front wheels like driveline shunt, as the engine takes over from e-drive, but mostly it's seamless. Volvo has given the driver impressive control too, with a Pure button for EV mode, AWD to spin both axles, and a Save button which stores your current level of charge (or siphons engine power if the batteries need a top-up). These buttons provide superior interactivity to, say, Porsche's Panamera e-Hybrid, and Volvo's trip computer feedback is brilliant.

Ah, mpg! The discredited European cycle, which the D6 would have tackled fully charged with a 31-mile EV range, recorded 148.7mpg. My best, on a motorway run after a six-hour charge, was 61.2mpg; overall we averaged 44.9mpg. The V60's finest hour was a 15-mile zero-emissions lap of London's Congestion Charge zone.

From the driving seat

- ⊖ Steering that fights your every input
- ⊕ Versatile hybrid system that offers the driver great control
- ⊖ Not much space for a Volvo wagon, especially in boot
- ⊕ Auto-braking and Active Beam neat safety features



Steering even more desperate than the Labour Party to get back to the centre position

LOGBOOK VOLVO V60 D6

Engine 2400cc diesel 5-cyl, 212bhp and 325lb ft + rear electric motor, 69bhp and 148lb ft **Gearbox** 6-speed auto, variable all-wheel drive **Stats** 6.1sec 0-62mph, 143mph, 48g/km **Price** £51,675 **As tested** £53,150 **Miles this month** 742 **Total miles** 17,412 **Our MPG overall** 44.9 **Official MPG** 148.7 **Fuel cost overall** £1742.83 **Extra costs overall** £485.69 (tyre and service)

You can hear a faint sci-fi whine at urban speeds; on the motorway the V60 is pretty refined, but tyre noise and wind whistle prevent Rolls-Royce rhapsodies of silence. Meaningful electric running, at speeds and for distances Toyota's hybrids can't currently match, engenders a proper feelgood factor.

Sadly it's nothing but a feelbad factor when it comes to the V60's dynamic qualities. The steering is a pig: you need a rugby forward's strength to manhandle it at low speeds (though it can be inconsistently light in corners), and when you do wrestle it off centre, it has a furious determination to ping back to 12 o'clock. It makes the D6 feel unresponsive and understeer.

Drive hard, and you can feel the heavy rear batteries having a pendulous effect on chassis balance, though the front wheels hang on tenaciously. The ride is stiff, with crests and potholes jarring. No problems with the progressive-feeling brakes, unlike the snatty response of some regenerative hybrid systems.

Option-wise, the £1900 Driver Support pack bundled together a mixed bag of safety kit. Active Beam was brilliant (ahem): simply leave high beam on, and be amazed as the mid-section of light drops out to avoid dazzling an oncoming driver, leaving a surrounding aura of brightness. Collision avoidance was clueless, often identifying parked cars or non-existent objects as hazards. But 'city safe' once activated the brakes just before I did, believing we were closing too fast on queuing traffic.

Reliability was mixed too: the front right brake screeched for a few days, though nothing was found to be grating, and the oil sensors flagged up an errant warning after the £288 first service. We also had a blowout, with the 18-inch Bridgestone costing £198 to replace, and the 12v battery had to be changed under warranty. In its last few days here, the hybrid system stopped taking any charge.

Ultimately these niggles, and the off-putting handling, make the V60 impossible to recommend. Shame, as its electric range makes it ideal for cities, while its diesel back-up eliminates an EV's compromises. Splendid drivetrain, shame about the rest of it. Or as Aristotle would have more elegantly summarised: the whole is less than the sum of its parts.

©CARPhilMc

The bride wore white, and so did the TT

MONTH 3 AUDI TTS

WITH AN INVITATION to a friend's wedding in west Wales in my pocket and a 500-mile round trip ahead, I skipped over the Ginetta's keys for a change and asked regular keeper Tim Pollard if he wouldn't mind me borrowing the TT. I'm keen to keep the Ginetta track-fit and I fancied taking a car with a radio. I know, I must be going soft.

So I've gone from a car with two analogue dials and an odometer to one with what looks like an entire cinema multiplex behind the steering wheel. The TT's fancypants digital instrument panel is rather spectacular, and a great talking point, but some hours into the journey I began to ever so slightly resent looking at it. Its unrelenting brightness can get a bit wearying at night – like sitting too close to a TV – and with myriad displays and functions to scroll through, you sometimes need to draw on reserves of willpower to keep your attention completely on the road, where it should be. But the TT's cabin as a whole is a bit of a masterpiece: beautifully put together, ergonomically intuitive and great to look at. A note to any Audi designers reading, though – can you make the coat hooks in the back a bit bigger, please? My suit made a bid for freedom every time the roads got twisty (as they tend to in Wales). Must be the G-forces – grip levels from the 4wd system and those huge tyres are prodigious, rain or shine. Unsurprisingly the ride's just a little bit choppy on those gun-carriage 20in rims and rubber-band-profile tyres, even with the dampers set to Comfort mode, but body control is fantastic. And it's so, so fast. Thing is, it's almost a bit too good. All that grip and sophisticated damping kind of sweeps a good road aside, rather than letting you really enjoy it.

The TT got a big thumbs up from friends at the wedding, turning plenty of heads. Bet it won't be much in a few months' time when the streets will surely be saturated with Mk3 TTs. Audi's got that want-factor thing nailed.

JAMES TAYLOR ©@JamesTaylor_5

From the driving seat

It's so, so fast It's 40 grand And yet goes without cruise control Optional sports seats super-comfy They should be, for £995 Postman Pat-red leather already showing signs of tarnish Coat hooks not G-force-proof



Our TT resplendent in Wales on a nice day for a white wedding

LOGBOOK AUDI TTS COUPE

Price £40,270 **As tested** £46,565 **Miles this month** 1128 **Total miles** 2980 **Our mpg** 27.9 **Official mpg** 40.9 **Fuel this month** £222.73 **Extra costs** £0

How we spec'd our Corsa VXR

Pearlescent Lime Green £545

Because we're not shy. Nope, not us...

Leather Pack £1045

Recaros in velour? Hell no

Performance Pack £2400

Slippy diff, concrete dampers, Brembo brakes, bigger wheels. Pricey but necessary

Carbon Pack £150

Cheap? That's because it's Luton-style plastic carbonfibre



ALEX TAPLEY

Shrek and the art of the sexy Corsa

For obvious reasons, shrinking violets aren't bright green. Can Vauxhall's lurid hot hatch live up to its in-yer-face paint? **By Ben Whitworth**

HELLO
MONTH 1
VAUXHALL
CORSA VXR

I'VE NEVER REALLY 'got' Vauxhall. I've liked many of its cars – sleek Calibra, ballsy VX220 and stubby GTC top the list – but it's never been a brand that has upped my bpm, never been quite on my must-drive radar. The Corsa VXR could change that.

The VXR weighs in at £17,995. Chunky money, but the top-dog Corsa comes pretty well equipped. Bi-xenon headlamps, grippy Recaros, DAB radio, chunky leather three-spoker steering wheel, two-stage traction, a smartphone-savvy IntelliLink infotainment system, air-con, heated windscreen and cruise control are standard.

It's powered by an evolution of the 1598cc blown four-pot from the outgoing VXR. Revised fuel-injection and air-intake systems are complemented by a Remus exhaust with reduced back-pressure. The engine develops 202bhp at a relatively low 5800rpm and a chunky 181lb ft that kicks in at 1900rpm and stays put until 5800rpm. There's even an 11sec overboost system that chuck's a further 26lb ft at the front wheels during foot-flat manoeuvres. And with a thick-ankled 1293kg kerbweight, all that torque will be necessary.

We decided to go the whole hog with the VXR so we also added the £1045 Leather Pack, £545 worth of pearlescent paint, the £150 Carbon Pack and the £2400 Performance Pack that includes a Drexler limited-slip diff, larger 330mm-diameter Brembo front discs, bigger 18in alloy wheels shod with gooey Michelin Pilot Supersports and Konis fitted with what Vauxhall euphemistically

calls 'more focused Frequency Selective Damping settings'.

If these features sound familiar it's because they were sported by the outgoing Nürburgring and ClubSport models, and lifted the Corsa from also-ran to contender.

In typical VXR style, it shouts about its performance. Within an hour of it arriving my young daughters nicknamed it The Shrek. Why? 'It's very green and very ugly!' Fair points, both. Its fussy nose treatment, gurning grille and bulging bum are big on muscular intent but low on style.

Surprisingly, the sober and neat cabin is low-key. VXR clues – subtle instrument graphics, logo'd gearknob, alloy pedals – are few and understated. Still, the basics are sound – low driving position, ideally spaced pedals and gearlever, and intuitive minor controls.

First impressions? Well, I haven't fallen in love. The good points first. That hefty torque means the Corsa pushes past slower traffic with ease. The superb Brembos are meaty and full of feel. The Recaros are both supportive and comfortable. Heel and toeing is a doddle with the pedals. Mechanical grip is astounding – the VXR scythes through corners with real security.

The not so good points? The engine comes to the party with plenty of torque, but grunt aside it's distinctly lacking in charisma. It sounds dull and flat, and there's little in the way of redline zing. Functional best describes it. The ride is borderline acceptable – it is very uncompromising, and every intrusion makes its way into the cabin. The steering is direct and precise but a touch light and a little mushy just off the straight ahead.

So then, a visual and dynamic mixed bag. Looks like The Shrek has its work cut out.
• @benwhitworth



Surely this is the wrong pic? A Corsa this lairy must be chock full of loud details and shouty design. This looks like your mum's Corsa 1.2

LOGBOOK VAUXHALL CORSA VXR

> **Engine** 1598cc 16v turbo 4-cyl, 202bhp @ 5800rpm, 181lb ft @ 1950rpm
> **Gearbox** 6-speed manual, front-wheel drive > **Stats** 6.5sec 0-62mph, 143mph, 174g/km > **Price** £17,995 > **As tested** £22,135 > **Miles this month** 1716 > **Total miles** 1716 > **Our mpg** 32.2 > **Official mpg** 37.7 > **Fuel this month** £336.55 > **Extra costs** £0



Fiat 500X

MONTH 2 By Ben Pulman

AFTER MONTHS in a Mini, the first impressions of the 500X are inevitably comparisons with its predecessor. Which means a cold diesel seems especially vocal following life with a hushed three-pot petrol, and after deft steering now all communications from the front wheels are suddenly being censored and redacted by an overzealous electric motor. Yet the seats, and the ride, are so much more comfortable. And having been in the Mini, and a hybrid Lexus before it, when did diesel become cheaper than petrol?

• @thebenpulman

LOGBOOK FIAT 500X 1.6 MULTIJET CROSS

> **Price** 20,095 > **As tested** £24,320 > **Miles this month** 703 > **Total miles** 2301 > **Our mpg** 47.5 > **Official mpg** 68.9 > **Fuel this month** £78.11



Seat Leon X-perience

MONTH 5 By Steve Moody

SPEAKING FOR myself, I'd never spec alcantara, the pleather of the suede world, as I figure it to be a wholly unsuitable canvas for the life of travelling children. It would be disfigured in no time by assorted fluids and melted objects.

The poo-brown central panels of the Leon's seats are made of the stuff, but are proving immensely wipe-clean and resistant to the kids' attacks, like the rest of the car. Sums the Leon up really: not made of the finest materials, but impressively hardy.

• @Sjmoody37

LOGBOOK SEAT LEON X-PERIENCE

> **Price** £26,370 > **As tested** £28,285 > **Miles this month** 744 > **Total miles** 5696 > **Our mpg** 47.3 > **Official mpg** 57.6 > **Fuel this month** £77.51 > **Extra costs** £0



Merc S500 PHEV

MONTH 9 By Georg Kacher

QUITE SUDDENLY, the so far faultless transition between fossil-fed and electric propulsion began to shed its inherent smoothness for more agitated manners. Cut-in and cut-out became irritatingly noticeable, throttle response varied from lazy to excited, part-throttle acceleration typically was a double-phased exercise. When I returned the graceful glider to its maker for a check-up, the man in blue smocks nodded knowingly: 'A software thing.' Sure enough, flashing the hard drive cured the problem. The only remaining drivetrain-related issue concerns the slow change from forward to reverse which is sudorifically reminiscent of early Ferrari F1 transmissions.

LOGBOOK MERCEDES-BENZ S500 PHEV

> **Price** €108,945 > **As tested** €154,890 > **Miles this month** 1481 > **Total miles** 12,509 > **Our mpg** 25.9 > **Official mpg** 100.9 > **Fuel this month** €401.13



Range Rover Sport

MONTH 9 By Ben Oliver

THE RANGE Rover Sport's £700 Surround Camera system is designed for off-roading, but it will also save you from ruinous insurance claims when you're parking in central London during Supercar Season and one of these appears on the monitor. The side cameras are great for avoiding kerbs and I use the nose-cams daily to peer out into blind junctions. Whether I should be driving a car so big that it requires its own perimeter CCTV system is another matter.

• @thebenoliver

LOGBOOK RANGE ROVER SPORT 3.0 SDV6 HSE

> **Price** £66,250 > **As tested** £75,607 > **Miles this month** 1102 > **Total miles** 11,467 > **Our mpg** 25.4 > **Official mpg** 37.7 > **Fuel this month** £231.78 > **Extra costs** £0



VW Golf R

MONTH 5 By Ben Barry

HOW MUCH more efficient is the R's 2.0-litre turbo than the previous R32's 3.2 V6? I don't have the definitive answer, but I once ran a 3.2-litre Mk2 Audi TT, a pretty similar thing. The Audi (DSG) made 250bhp, achieved 30mpg on the combined cycle and returned 26.9mpg with me driving. The Golf makes 296bhp, claims 39.8mpg and averages 30mpg. Interesting how much closer the V6 got to the lab figures, but I prefer the lighter, punchier, more frugal four. No downsizing blues here.

• @lamBenBarry

LOGBOOK VOLKSWAGEN GOLF R

> **Price** £31,475 > **As tested** £35,640 > **Miles this month** 896 > **Total miles** 4659 > **Our mpg** 29.5 > **Official mpg** 39.8 > **Fuel this month** £163.97 > **Extra costs** £0



Lamborghini Huracan

MONTH 5 By CJ Hubbard

BAM! THINGS you never think about until there's trouble include wheelarch linings. In particular the leading edge of the Huracan's rears, which are lower than the bottom of the car. Meaning that when I took someone else's extra large roadkill – monk jack deer? particularly fat badger? – under the nearside wheels the poor thing tore said lining right out of its mountings. The choice between weeks waiting for a replacement side skirt or a bit of glue wasn't a tough one...

• @ir_427

LOGBOOK LAMBORGHINI HURACAN LP610-4

> **Price** £186,760 > **As tested** £224,836 > **Miles this month** 1261 > **Total miles** 14,630 > **Our mpg** 18.4 > **Official mpg** 22.6 > **Fuel this month** £398.57 > **Extra costs** £0



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DMS 1M (EVO MARCH 12) "THERE'S A REAL RIP TO THE WAY THE REVS PILE ON ABOVE 4000RPM"

DMS SL65 BLACK SERIES (EVO OCTOBER '10) "IT FEELS LIKE THE LOVE CHILD OF AN SL65 AND A PORSCHE GT2"

DMS 135i (BMW CAR MAY '09) "THE STANDARD CAR IS GREAT BUT DMS HAVE SOMEHOW MANAGED TO TAKE IT TO THE NEXT LEVEL"

DMS 997 TURBO 3.6 (EVO SEPTEMBER '08) "IT'S EPIC, HILARIOUS AND ADDICTIVE IN EVERY GEAR, YET DOCILE WHEN CRUISING"

DMS 997 TURBO 3.8 PDK (EVO JUNE '11) "DELIVERY IS ALMOST UNCOMFORTABLY FORCEFUL"



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AUDI RS6 V10 » 680+BHP (+DE-LIMIT)
AUDI R8 V10 » 592+BHP (+DE-LIMIT)
AUDI RS4 B7/ R8 » 445 BHP (+DE-LIMIT)
AUDI RS3/RSQ3 » 420+BHP (+DE-LIMIT)
AUDI S3 / GOLF R » 373+ BHP (+DE-LIMIT)
AUDI 3.0TDi (ALL MODELS) » 315+ BHP
AUDI 3.0 Bi-TDI (ALL MODELS) » 380+ BHP
AUDI Q7/A8 4.2 TDi » 400+ BHP

BMW

M5 V10 » 548+ BHP (205 MPH)
X5M / X6M » 618+ BHP
1M » 411+ BHP
M3 E90/92 » 445 BHP (+DE-LIMIT)
M135i/ M235i » 402 BHP
M4/M3 3.0T » 520+ BHP
M5 F10/M6 (STAGE 1) » 680 BHP
M5 F10/M6 (STAGE 2) » 730 BHP
F10 520D » 240 BHP
F10 530D » 305 BHP
335i/135i/X6 » 370+ BHP (+DE-LIMIT)
123D » 252 BHP

316D/216D/116D » 160 BHP
318D/218D/118D » 225 BHP
330D E90 » 296+ BHP
320D E90 » 215 BHP
420i/320i/220i/120i » 275+ BHP
435i/ F30 335i » 390 BHP
428i/328i » 295 BHP
535D / 335D / X5 SD » 355+ BHP
640D/335D/535D/435D » 390 BHP
730D » 305+ BHP
X5 4.0D / 740D » 370 BHP
X5 3.0D » 305 BHP
X6 X5.0i 4.4 » 500+BHP
X6 M50D/X5M50D/550D » 450 BHP

MERCEDES-BENZ

A200CDi/C200CDi/E200CDi » 175 BHP
A250/C250 » 260 BHP
A45/CLA45 » 420 BHP
C300 HYBRID » 285 BHP
A220CDi/C220CDi/E220CDi » 215 BHP
C350/CLS350/E350/S350 » 315 BHP
E400 /C450 » 420+ BHP
C400 » 400 BHP
'63' 5.5 Bi-TURBO ALL MODELS » 690+BHP
'500' 4.7 Bi-TURBO ALL MODELS » 498+BHP
S65 (W222) » 780 BHP
SL65 BLACK » 720+ BHP (+DE-LIMIT)
SL65 AMG » 690 BHP (+DE-LIMIT)
'55' AMG KOMPRESSOR » 580+BHP
C63 AMG 6.3 » 530+BHP (+DE-LIMIT)

C63 AMG 4.0T » CALL FOR DETAILS
SL63 AMG 6.3 » 560+BHP (+DE-LIMIT,
RE-MAP & LOWER ABC SUSPENSION)
CL600 Bi-TURBO » 580+ BHP
SLK55 AMG » 420+ BHP (+DELIMIT)
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350 CDi V6 » 312 BHP
420/450 CDi V8 » 358 BHP

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R ROVER 3.0 TDV6 » 315+ BHP
R ROVER 3.0 SDV6 » 345+ BHP
EVOQUE/DISCO SPORT 2.2 DIESEL
» 240+ BHP

PORSCHE

997 TURBO/S 3.8 INC PDK » 611 BHP
997 TURBO 3.6 » 625+ BHP
997 GT2 RS » 670+ BHP
996 TURBO/GT2 » 600+ BHP
997 CARRERA S PDK » 400+ BHP
997 CARRERA S » 376+ BHP
997 CARRERA PDK » 368 BHP
997 CARRERA GTS » 435 BHP
997 GT3 UP » 436 BHP
BOXSTER 3.4S » 336+ BHP
CAYMAN S » 342 BHP
MACAN 3.0D » 315 BHP
CAYENNE GTS » 440 BHP

CAYENNE TURBO 4.8 » 578+ BHP
CAYENNE TURBO S 4.8 » 600+ BHP
CAYENNE 4.2 DIESEL » 450+ BHP
CAYENNE DIESEL » 315+ BHP
PANAMERA TURBO » 600+ BHP
PANAMERA DIESEL » 315+ BHP

EXOTIC / MISCELLANEOUS

FERRARI CALIFORNIA » 487 BHP
FERRARI 599 » 647 BHP
FERRARI 430 » 525 BHP
GALLARDO » 546 BHP
LP560 » 608+BHP
LP640 » 707 BHP
HURACAN » 640+ BHP
AVENTADOR » CALL FOR DETAILS
MCLAREN MP4-12C » 700 BHP
MCLAREN 650S » 720 BHP
MURCIELAGO LP640 » 707 BHP
MASERATI GHIBLI 3.0S PETROL » 470 BHP
MASERATI GHIBLI 3.0 PETROL » 400 BHP
MASERATI GHIBLI 3.0 DIESEL » 312 BHP
MASERATI GT/Q/PORT » 438 BHP
MASERATI GT S / MC » 479+ BHP
BENTLEY 4.0 T V8 » 690 BHP
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The Good, the Bad & the Ugly

ABARTH

500 ★★★★☆

► Pricey pocket rockets, all powered by 1.4-litre turbos in various stages of steroid over-compensation. Divine details, dodgy dynamics
► **VERDICT** Like a small yappy dog: noisy, excitable and likely to give you headache

ALFA ROMEO

MITO ★★★★☆

► Decent engines but generally rubbish to drive, Alfa's soggy-handling, hard-riding premium mini is crucified by the real thing and Audi's A1+
► **VERDICT** At least it's got its looks. No, wait. It's an ugly Alfa. It's got nothing

GIULIETTA ★★★★☆

► Looked like a credible Golf rival for a while but now the game has moved on. Keen prices, but rivals are roomier, classier and more fun to drive
► **VERDICT** Miles better than a Mito. Miles better than a 4C, even. Miles behind a Mk7 Golf

AC/4C SPIDER ★★★★☆

► Sexy carbon two-seater over-promises and under-delivers on a double-your-dong-length web-scam scale. Spider a step in right direction
► **VERDICT** Shoots for the moon, hits itself in the foot. Else more fun, Cayman a better bet

ALPINA

D3/B3 ★★★★☆

► Twin-turbo petrol and diesel stonk and smooth auto 'boxes mated to a quality chassis, but watch for some questionable OAP-spec interior finishes
► **VERDICT** Try an xDrive D3 Touring – it's what the M3 wants to be when it grows up

D4/B4 ★★★★☆

► Same blend of fast and frugal as above but slotted into slinkier 4-series shell. ZF auto not as snappy as M4's twin clutch, but much smoother
► **VERDICT**: 53mpg and 62mph in 4.6sec? And you're alright with this, BMW?

D5/B5 ★★★★☆

► Twin-turbo B5 petrol V8's 590lb ft could de-forest the Amazon while planet-loving D5 doesn't let meagre 155g/km prevent 174mph max
► **VERDICT** M5 alternative with Touring body option you can't have with the real thing

B7 ★★★★☆

► BMW doesn't make an M7, but Alpina does. Twin-blown petrol V8 delivers 'bahn-busting' performance that's best enjoyed in Germany
► **VERDICT** Niche S63 alternative hamstrung by ugliness of the raw materials

NEW IN THIS MONTH



p141

BMW 7-series

'Gesture control, remote parking, active anti-roll – it's got it all, but not the kudos of the S-class'



p146

Skoda Superb

'Now so vast inside it echoes. All the family car you'll ever need – only bigger'



p143

McLaren 675LT

'Magic. Whatever deal Woking's done with the devil, it's worked'

XD3 ★★★★☆

► X3 35d-based high-rise hot-rod delivers 350bhp, 516lb ft, and the horizon through your windscreen. Spoiled by a rock-hard ride
► **VERDICT** Another niche BMW Munich leaves to Alpina, maybe 'cos Porsche Macan is better

ARIEL

ATOM ★★★★☆

► Only the Pope's lips get more up close and personal with the tarmac than an Atom driver, but there's zero protection when the heavens

open
► **VERDICT** Spectacular toy. Great on track, barmy on road. Chassis doubles as a clothes airer, which is just as well...

NOMAD ★★★★☆

► Not content with terrifying on tarmac, Ariel now offers the off-road Nomad. Gains a roll-over structure but still no doors...
► **VERDICT** Don't forget to put the hot water on – you'll be needing a bath when you get home

ASTON MARTIN

VANTAGE ★★★★☆

► Ageing entry level Aston has ace steering, but make sure you go manual: plodding semi-auto is as dynamic as a Ron Dennis interview
► **VERDICT** Longer in the tooth than Brucie, but constant updating means it's still desirable

VANTAGE V12/GT12 ★★★★☆

► Cramming huge V12 into Vantage's V8-sized engine bay makes for a track weapon that thinks it's a hot rod. Superb chassis, but

another duff 'box
► **VERDICT** Crazy cars, crazy prices – they want £250k for wild GT12, yet it instantly sold out

DB9 ★★★★☆

REPLACED SOON
► Recently re-skinned, and now with 8-spd ZF auto. Our long termer had 'bespoke concerns' (the trustworthiness of a cracked bank cashier)
► **VERDICT** A beautiful GT, but same money buys more exciting V12 Vantage

VANQUISH ★★★★☆

► Looking like the old DBS after 10 sessions of lipo, Vanquish's exquisite detailing hides modern carbon structure, but performance is a decade out
► **VERDICT** Heart says buy, until a Ferrari F12 says bye-bye

RAPIDE ★★★★☆

► Take that, Panamera! Aston shows Porsche how to make a supercar/saloon cocktail. Forget limo pretensions though, it's a four-door 2+2
► **VERDICT** Pretty, but interior more dated than a New York socialite and as hard on your wallet

AUDI

A1 HATCH/SPORTBACK ★★★★☆

► Posh Polo does it all, from 1.0 miser to St1 micro rocket. Not cheap, even before you've splurged on options. £30k is a mouse click away
► **VERDICT** Classy Mini rival that doesn't turn into Quasimodo when you tick the 5dr option

A3 HATCH/S'BACK/SALOON

★★★★★

► Your passengers will be in awe of the refinement and finish, unless they're nursing knees bashed in the back of the shorter three-door shell
► **VERDICT** Brilliant hatch and not much financial gulf to a Golf. Try sporty S-Line on supple SE chassis

A3 CABRIOLET ★★★★☆

► Premium sun-grabber without macho sports-car posturing. A bit tight in the back, but pretty tight in the bends too. Try a 1.8 TFSi with Sport trim
► **VERDICT** Asexual drop-top for sensible shoe types. Worth the £2k premium over Golf

S3 / RS3 ★★★★☆

► Further proof that the Germans are still power junkies at heart. 296bhp S3 is trouble enough, while new 362bhp RS3 will do 174mph. Achting, baby.
► **VERDICT** Far better than they used to be, but not as exciting as they should be. Buy a Golf R

A4 SALOON/AVANT/ALLROAD

★★★★★

REPLACED SOON
► Creaky A4 still looks the part but us it will be put out of our misery later this year when new one arrives. Duff ride, dated dash, decent engines
► **VERDICT** Never class leading when new, and that was in 2008! C-class is better

RS4 ★★★★☆

► Brutal RS treatment makes a monster of ho-hum A4. No 4dr, no manual and no turbos, this wicked wagon's V8 redlines higher than Ferrari's 488GTB
► **VERDICT** Pace and space, but rides like the tyres have a tic. No match for new C63

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A5 SPORTBACK ★★★★*

> In a class of one until BMW finally got its act, and the 4-series Gran Coupe, together. Pretty and practical, but like its drivers, feeling its age >
VERDICT Fatherhood doesn't seem so bad with family cars this handsome. Then you drive it

A5 COUPE/CABRIO ★★★★*

> Like a 4ft 8in Miss World, stunning A5 has the looks but not the legs. Yours will suffer too thanks to offset pedals and zero rear legroom >
VERDICT Buying now? BMW 4-series. Feeling patient? Wait for 2016's stunning C-class coupe

RS5 ★★★★*

> Has iconic Quattro arches, but feels like it was engineered down the Arches at Phil Mitchell's EastEnders den of bodgey. Cramped too >
VERDICT Great V8 can't save misfiring flat-footed coupe. Buy a BMW M4, or the better RS4

A6 SALOON/AVANT/ALLROAD ★★★★*

> Demure big Audi an unsung hero, refined and cheap to run. Allroad an SUV for agoraphobics; twin-blown 309bhp BiTDi a proper mischief maker >
VERDICT Base models short on wow, but a solid alternative to better-handling Jag XF

RS6 ★★★★*

> For wealthy mentalists who think the S6's 444bhp isn't enough, RS6 delivers 25% more and gives the new R8 V10 a hard time at the lights >
VERDICT Beautifully finished all-weather family wagon that scares supercars silly

A7 SPORTBACK ★★★★*

> Slant-roof A6 takes styling cues from pretty '60s 100 coupe but can't out-cool Merc's CLS. More grippy than a sloth whose been sloppy with the superglue >
VERDICT Stylish GT with sensible engines, but a sports saloon? My RS, maybe

RS7 ★★★★*

> Pricier, less practical RS6 with fastback rear, same guts but gets clever rear diff as standard for oversteer here, there and everywhere given room >
VERDICT An Aston Rapide for the AA-phobic, but we'd have the naughtier RS6

A8 SALOON ★★★★*

> Audi's elder statesman for elder statesmen has more tech than CES at Vegas but who wants people to think they're being chauffeured in an A4? >
VERDICT Gadgets galore, but Merc's incredible S-class nabs the luxury basics better

Q3 ★★★★*

> Dumpy dinky faux field forager is a yummy mummy fav. Forget 4wd and the diesels and go for light, zippy, 1.4 TFSi >
VERDICT So much better to drive than it looks. Which it'd have to be, right? Unless it was an Alfa

RSQ3 ★★★★*

> Audi's first tall-boy RS model. Hearing of the £45k price or unleashing that 335bhp five-pot both elicit same incredulous gasp >
VERDICT Who needs this stuff? Short people in a rush? What we do know is it's better than a GLA45 AMG

Q5 ★★★★*

> Car-like SUV offers everything from **BEST IN CLASS** meek 180bhp front driver to a ballistic SQ5 bi-turbo diesel delivering RS performance without the fuel bills >
VERDICT Still one of Audi's best. Beats a top-spec A4, if not a bottom-spec Macan

Q7 ★★★★*

> Formerly massive 7-seat SUV with Titanic-like weldiness morphs into massive 7-seat jacked-up estate car in new Mk2 guise >
VERDICT Lighter and less thirsty than before, but still less charming than Jean-Claude Juncker

TT COUPE/ROADSTER ★★★★*

> Brilliant coupe gets virtual dash, and sharper handling. Try 2.0-FSI. Boot big, but rear seats for handbags only (some men have them, you know) >
VERDICT A proper real-world sports car – but same money buys an early R8!

R8 V10/V10 PLUS ★★★★*

> Friday afternoon restyle meets Monday morning mechanics. New R8 offers no V8 for now, but V10 is back with 533bhp or Lamborghini-equaling 602bhp >
VERDICT A Lamborghini Huracan for £50k less. Friendly but ballistic; playful chassis a joy

BAC**MONO ★★★★***

> Single-seat racer that took a wrong turn out of the pits. Pushrod suspension, Cosworth-tuned 2.3 Duratec and bath-like driving position >

VERDICT Sublime track-tool with a six-figure price that'd net you a Cayman GT4 and an Atom

BENTLEY**CONTINENTAL GT COUPE/CABRIO ★★★★***

> The repmobile of millionaires. Reliable, well-built and yes, full of VW bits. Death Star smooth W12 now sounds more rebellious, while twin-turbo GT V8 S is joyful >
VERDICT More of a sportscar than its hefty GT image suggests

CONTINENTAL GT3-R ★★★★*

> Bonkers road racer with Max Power styling, no rear seats and shouty exhaust. Surprisingly nimble using 4wd and torque vectoring, and epicly fast thanks to tricked up 580 V8 >
VERDICT Uncouth drag racer for rich Russians

FLYING SPUR ★★★★*

> New Spur is sharper to drive, sharper to look at, softer to sit in, and feels less like a stretched Conti. Fridge and iPads essential options for pampered rear-seat recliners >
VERDICT Think of it as a bargain Roller rather than a pricey A8

MULSANNE ★★★★*

> Huge, handbuilt anachronism, with twin-turbo V8 born in the '50s, buffed to perfection, and a field of cows sacrificed for your arse's pleasure >
VERDICT Buy the Speed – any less outrageous display of consumption is just poor form

BMW**1-SERIES ★★★★***

> Only rear-driver in its class. Good for handling, not for cabin space. Just facelift so now 3% less grotesque. 118i petrol a brilliant all-rounder >
VERDICT Want a roomy, well-appointed hatch that's great to drive and look at? Buy an A3

M135I ★★★★*

> Last of the downsizing deniers, BMW's hot hatch stays with six-pot power when all rivals offer four. Undercuts mechanically identical M235i by £4.5k >
VERDICT Storming drivetrain, but VW's incredible Golf R just pips it

2-SERIES COUPE/CABRIO ★★★★*

> Boot-faced booted 1-series is a Mustang with a couple of A-levels. 218d is 8.9 to 62mph and 63mpg; 4 cyl 228i a cut-price, cut-down M235i >
VERDICT Plainer than a margarine sarnie, but TT and RCZ can't touch its space/pace combo

M235I ★★★★*

> Shoestring M3 quicker than a Cayman and almost as costly if you're profligate with options. 322bhp std; 380bhp just a Superchip away >
VERDICT Satisfyingly simple and a blast to drive. Coupe shell + manual 'box = purest thrills

2-SERIES ACTIVE TOURER ★★★★*

> BMW in front-drive MPV shock. Decent drive, great interior. Need to cart OAP relatives around? You'll need the 7-seat Gran Tourer. Boom boom! >
VERDICT The ultimate driving (to the park/crèche/post office) machine

I3 ★★★★*

> One of BMW's best cars is home to its finest cabin. Electric version has short range; hybrid is noisy and has a fuel tank like a flea's hip flask >
VERDICT Carbon chassis supermini, electric power and £30k price. Did we wake up in 2045?

3-SERIES SALOON/TOURING ★★★★*

> Celebrating four decades of overpriced, undersized family cars. New modular engines make it better than ever, 320d (now sub-100g/km) still top choice >
VERDICT Jag XE is treading heavily on its twinkling toes

3-SERIES GT ★★★★*

> High-rise Touring alternative almost as vast as a 5-series thanks to wheelbase stretch, but way more hideous. Another BMW design disaster >
VERDICT A £35k Mondeo with a BMW badge. Why bother when the same-price X3 is so good?

Number crunching

Powered by:

**6 BIGGEST FUEL TANK CAPACITIES**

Need to cross continents but hate petrol stations? Then you're going to need a bigger tank...

105 litres Range Rover

As offered on only the really big Range Rover and Range Rover Sport engines (4.4 SDV8 diesel and 5.0 supercharged V8 petrol). Pick the diesel for distance

RANGER ROVER 4.4 SDV8 DIESEL

334BHP PERFORMANCE 6.9SEC 0-62MPH

135MPH THEORETICAL RANGE 751 MILES OR COVENTRY TO ZURICH ON A SINGLE

TANK PRICE FROM £81,950

**100 litres Radical RXC**

Cars available with a 100-litre tank include the Merc GL, Porsche Panamera, Rolls Phantom, VW Touareg – and the Radical RXC. Keep on lapping...

RADICAL RXC 3.7-LITRE V6 PETROL

350BHP 0-62MPH 2.8SEC TOP SPEED

AERO DEPENDENT THEORETICAL RANGE SEVEN LAPS OF THE 'RING AND A TRIP

TO THE SHOPS PRICE FROM £113,400

**96 litres Bentley Mulsanne**

There are two cars on sale with a 96-litre fuel capacity – the Mulsanne and the Mercedes G-class. Neither is going to win you a political correctness award.

BENTLEY MULSANNE 6.75 V8 PETROL

505BHP 0-62MPH 5.3SEC TOP SPEED

184MPH THEORETICAL RANGE 408 MILES, OR CREWE TO INVERNESS ON A SINGLE

TANK PRICE FROM £81,950

**93 litres Mercedes GLE**

Even the puny 2.1-litre Mercedes GLE250d gets a 93-litre tank – at a claimed 47.9mpg that's a huge range. See also the Grand Cherokee and Land Cruiser V8.

MERCEDES GLE250D 2.1 4-CYL DIESEL

201BHP 0-62MPH 8.6SEC TOP SPEED

132MPH THEORETICAL RANGE 980 MILES, OR STUTTGART TO DUBLIN ON A SINGLE

TANK PRICE FROM £49,280

92 litres Ferrari F12

The not so puny 6.3-litre V12 in the Ferrari F12 doesn't so much need a 92-litre fuel tank as demand it. Anyone who gets close to the official 17.3mpg is a saint.

FERRARI F12 6.3 V12 PETROL 731BHP

0-62MPH 3.1SEC TOP SPEED 211MPH

THEORETICAL RANGE 350 MILES, OR MARANELLO TO GENEVA ON A SINGLE

TANK PRICE £240,083

**91 litres Aston Rapide S**

Four-seater Aston GT and Ferrari FF both pack in 91 litres of fuel. Rapide has the glamour, FF the boot space.

ASTON MARTIN RAPIDE S 6.0 V12 PETROL

552BHP 0-62MPH 4.4SEC TOP SPEED

203MPH THEORETICAL RANGE 438 MILES, OR GAYDON TO AMSTERDAM, FOR SURE

PRICE £147,950

JATO Dynamics is the world's leading provider of automotive intelligence. To learn more check out www.jato.com

THE GOOD, THE BAD & THE UGLY.

4-SERIES COUPE/CABRIO ★★★★☆

3-series in a shell suit subtly better to drive, but same great engine choices and almost as practical. Shame about the carryover cabin ➤ **VERDICT** Crushes Audi's ancient A5. Folding hardtop cabrio weighty but worth it

4-SERIES GRAN COUPE ★★★★☆

Pretty and practical, like a bikini car wash, hatchback GC costs £3k more than 3-series but has std leather. Five belts but only four seats ➤ **VERDICT** Smart and useful, much more than a niche exercise. But why isn't this the 3-series?

M3/M4 ★★★★☆

M3 is saloon only; coupe is M4. Both ditch V8 for 425bhp twin-turbo six with choice of manual or DCT auto. Still no xDrive 4x4 ➤ **VERDICT** Dynamite drift machines' mega mid-range comes at the expense of old V8's joie de vivre

5-SERIES SALOON/TOURING ★★★★☆

Hard to fault the default exec. Go for 520d or 530d M Sport, ZF auto, adaptive dampers. Ace adaptive headlamps a £545 option ➤ **VERDICT** Stylish as Teflon trousers but that drip-dry gusset is just so handy. Best exec bar none

5-SERIES GT ★★★★☆

BMW GB: 'The contours... make its attraction instant. Stylish presence of a saloon combines harmoniously with the sporty elegance of a coupe' ➤ **VERDICT** Munich's Vel Satis. Hated by critics, loved by owners. All three of them

M5 ★★★★☆

While our enthusiasm for the twin-turbo V8 is tempered slightly by the artificial engine noise, it's sublime to drive and gets better with every iteration ➤ **VERDICT** Still the fast saloon daddy. 592bhp '30 Jahre edition' utterly magnificent

6-SERIES COUPE/CABRIO ★★★★☆

Anonymous big GT best enjoyed with mighty 40d diesel power. Plenty of room for four – if you fire your passengers into the back via a wood-chipper ➤ **VERDICT** Under-the-radar GT bruiser, short on sex, but not on appeal

6-SERIES GRAN COUPE ★★★★☆

Coupe? It's a bloody saloon! And £20k more than a same-engined 5-series! BMW must chuckle at every sale. Still, rather nice ➤ **VERDICT** Desirable enough to leave the 6-series coupe in the shade/showroom

M6 ★★★★☆

Six-figure M5 in a shiny suit is even better to drive. Two-door looks good value beside Merc's S63 coupe, but can't touch a 911 GTS for kicks ➤ **VERDICT** M6 GC almost makes M5 redundant, but at £100k/18mpg you'll need two jobs

7-SERIES ★★★★☆

So high-tech BMW presumably ram-raided Google's R&D bunker, confident the 'carbon core' construction would enable it to drive back out ➤ **VERDICT** Gesture control, remote parking, active anti-roll – it's got it all. But not the kudos of the S-class...

X1 ★★★★☆

Ugly old one sold by the bucket load; all-new replacement is miles better to look at and to drive. It's a proper mini SUV now... ➤ **VERDICT** It's even based on the fwd Mini platform. Swallow that bile now

X3 ★★★★☆

Studious un-gangsta SUV shuns petrol power – and M Power – options for solid diesel-only blend of handling and handiness. Looking better post facelift ➤ **VERDICT** The BMW SUV we don't hate ourselves for liking

X4 ★★★★☆

Blame the Evogue and people who bought the X6 for this carbuncle. £4-5k more than an X3, but better equipped and annoyingly better to drive ➤ **VERDICT** Depressing X3 spin-off for grown-ups who still dream of being a footballer

X5 ★★★★☆

One-time Premier League fave looking more like League 1 beside better-driving, and -looking rivals. Skinfint sDrive 25d is a swish four-banger ➤ **VERDICT** Still impresses with engines and quality, but thanks to Landie it's lost its lustre

X6 ★★★★☆

All the impracticality of a coupe and all the

wasteful high-centred mass of an SUV. Genius. If you must, X40d gives best price/punch/parsimony ➤ **VERDICT** Pointless pimp wagon. Buy a Porsche Cayenne or even an X5

Z4 ★★★★☆

Sports car for post-menopausal women in lemon trouser suits. Coupe-cabrio roof hits boot space when folded. Base 18i spec sub-Wartburg ➤ **VERDICT** No match for Boxster. Stick with mid-spec trim. And keep taking the evening primrose

I8 ★★★★☆

Carbon-constructed 3-cyl hybrid supercar that's fun for four, as fast as an M3 and does 40 real mpg. Minor demerit: looks like it's crimping off a 911 ➤ **VERDICT** Fascinating and fabulous. The future of the sports car is in safe hands

BUGATTI

VEYRON ★★★★☆

A decade on, still the ultimate hypercar, although more limited editions than a Vauxhall Nova take some lustre off W16-powered redefinition of what's possible ➤ **VERDICT** Will we ever see its like again?

CATERHAM

SEVEN ★★★★☆

Still the benchmark for bobble-hatted Terry Thomas wannbes, the adaptable Seven comes in flavours from 160 3-cyl to mental road racers ➤ **VERDICT** 80bhp 160 underpowered, 310bhp 620R lethal, 180bhp 360 model just right

CHEVROLET

CORVETTE ★★★★☆

Farm machinery meets space lab in fabulous 460bhp V8 symphony of composite materials, leaf springs and push rods. Shame it's left-hook only ➤ **VERDICT** £60k for a bargain berserker. £20k more for the 650bhp Z06

CITROËN

C-ZERO ★★★★☆

Remember when electric cars were expensive, oddly packaged, with hardly any range? If not, refresh your memory with a C-Zero ➤ **VERDICT** £6k for a Tupperware box. There are cheaper ways to carry your sandwiches to work

C1 ★★★★☆

Trying hard to escape the clutches of its sister cars, the C1 can have a funky Airscape cloth roof and half-hearted personalisation options. 1.0-litre has most pep ➤ **VERDICT** Good, solid proletarian urban fare rather than hipster cool

C3 ★★★★☆

Serious sibling rivalry issues as dull C3 loses out to dashing DS3. Now handles a bit better after a refresh, and has five doors. The end ➤ **VERDICT** If you're not even the most talented in your family, how are you going to beat the rest?

C3 PICASSO ★★★★☆

Compact supermini-based box that's fun to drive (avoiding the petrol one, mind) and well-packaged. Might not set pulses racing, but you'll get very protective of it ➤ **VERDICT** They can take the piss, but it's a faithful, lovable friend

C4 ★★★★☆

Recently refreshed C4 has all the edginess of a Hush Puppy deck shoe. But it's useful, anodyne transport and sub-100g/km BlueHDi models are very economical ➤ **VERDICT** Nobody would hate you – or notice you – if you bought one

C4 CACTUS ★★★★☆

An architect's wet dream. Sloppy to drive but otherwise a roomy family car with kid's toy colour combos. Airbumps will stop it kicking off in the car park ➤ **VERDICT** Cheap yet brilliant. Why can't the French be this good all the time?

C5 SALOON/ESTATE ★★★★☆

Be aware: this car is still in existence. Slow selling but roomy estate is fairly stylish and practical with Hydractive rear suspension ➤ **VERDICT** There have been great French family saloons. This is not one

C4 PICASSO ★★★★☆

Defiantly anti-cool family shifter. Touches like

lower rear windows and sprogwatch mirror make mums go weak at the knees for its peace-and-bloody-quiet ambience ➤ **VERDICT** Drives like a shed. Who cares, if Satan's brood shut up?

BERLINGO MULTISPACE ★★★★☆

Recently refreshed with SUV aspirations, but still a wipe-clean tin lifeboat for cagoule-wearing Thermos-sipping birdwatchers. Rattles and drives like a van. Is a van ➤ **VERDICT** Dogging cheapsheets for aspiring Bill Oddies

DS3 HATCH/CABRIO ★★★★☆

Surprise winner clad in John Lewis wallpaper prints. A middle-class rethinking of an average supermini. But even sporty 155bhp lacks sparkle ➤ **VERDICT** Goes with your tablecloth and handbag. Gallic chic still desirable, done right

DS4 ★★★★☆

Jacked up hatchback that's not an SUV, but is sportier than a C4 but not actually very athletic. Work that out ➤ **VERDICT** Found: if you recognise this car, please write to 1 de Gaulle Street, Paris, France

DS5 ★★★★☆

Office joker in testosterone world of Serious Business Men. Quite appealing, with a lovely aerostyled cabin. Diesel Hybrid4 a good idea not executed properly ➤ **VERDICT** Bland ubiquity will always beat charming quirkiness

DACIA

SANDERO ★★★★☆

Cheapest new car on sale not the worst. Yoghurt-pot plastics and pre-Glasnost styling can't detract from a spacious sub-six grand runabout with Renault engines ➤ **VERDICT** Austerity rocks. Right, Greece?

LOGAN ★★★★☆

Estate looks like a Sandero that's reversed into phone box. Cavernous boot, but dreadfully unrefined thanks to all the brittle plastic and tin ➤ **VERDICT** You put things in it. It will carry them for you. You can take them out. Job done

DUSTER ★★★★☆

No-nonsense SUV that's ideal for wannabe peacekeepers on a ridiculously small budget. Buy the boggo 4x4 diesel in white for the full UN effect ➤ **VERDICT** The Neighbourhood Watch will never be the same again

FERRARI

488 GTB ★★★★☆

We were worried the turbos would ruin it, but while we'll miss the 458's 9000rpm wail, the 488 is more playful and even easier to drive. A stunning achievement ➤ **VERDICT** Even the looks grow on you after a while. Rivals better dust off their gracious loser faces

CALIFORNIA T ★★★★☆

L-plate Ferrari first of Maranello's new turbo cars. Boost management mimics naturally aspirated engines. Looks better, sounds worse ➤ **VERDICT** Forget the unfair 488 comparisons, it's an SL65 rival and well worthy of the badge

F12 ★★★★☆

Jumbo GT with 700bhp turns like a supercar, cruises like a limo and drifts like a nitrous-guzzling M3. 488 gets the girl but this is the better car ➤ **VERDICT** Multi-talented coupe makes Aventador look as sophisticated as a Piedmontese peasant

LA FERRARI ★★★★☆

1000bhp hybrid hypercar where the electric bits exist to save tenths not icecaps. 499 to be built and all sold despite the £1.2m asking price ➤ **VERDICT** The greatest single supercar of all time – except maybe the FXX K track version

FF ★★★★☆

Supercar meets Scimitar in this luxurious two-door wagon with a fiendishly clever on-demand 4wd system via second gearbox ➤ **VERDICT** Like an arranged marriage, love grows from respect, and certainly not at first sight

FIAT

PANDA ★★★★☆

Spacious city car with 'squircle' obsession, as roly-poly as the blobby looks suggest. Two-

pot TwinAir willing but thirsty when pushed ➤ **VERDICT** VW Up costs less, drives better and is nicer inside. Grin and bear it?

500/C ★★★★☆

Panda in a retro frock is still a darling amongst trendy urbanites. Endless special editions keep it fresh, driving dynamics keep us underwhelmed ➤ **VERDICT** Style over substance and a crashy ride. But the style is in high supply

500L/MPV ★★★★☆

Bloated supermini-sized people carriers, desperately attempting to cash in on city car's chic. Seldom has the point been so massively missed ➤ **VERDICT** In-car coffee machine option the only purchase excuse

500X ★★★★☆

Compact crossover is Arnold Schwarzenegger of the 500 range – steroidal and somewhat limited in its range of abilities, but actually rather likeable ➤ **VERDICT** Worthy Nissan Juke alternative works the 500 thing surprisingly well

PUNTO ★★★★☆

Been facelifted more times than Joan Rivers but is somehow still alive. Now reduced to barebones range and budget price. We still wouldn't ➤ **VERDICT** You might be tempted. Don't be

QUBO / DOBLO ★★★★☆

Postman Pat's family wheels? Don't be daft, Pat's retired to the Caribbean and is living off the licencing rights. Drives a Bentley. A red one ➤ **VERDICT** Van-based MPVs that put practicality first, people second

FORD

KA ★★★★☆

Take one Fiat 500, marginally improve the dynamics then snatch defeat from victory with dull restyle that removes entire reason to purchase ➤ **VERDICT** Ford's worst car. Noisy, slow, plasticky, too expensive. Buy a used Fiesta

B-MAX ★★★★☆

B-pillar-free Fiesta-based mini MPV gets rear sliding doors for maximum practicality but not the sliding rear seats of some rivals. Firm ride ➤ **VERDICT** Buy with a 1.0 Ecoboost triple and Zetec trim for maximum school-run fun

FIESTA ★★★★☆

Still brilliant after all these years, Fiesta is poised and practical. Terrific new triples make up for an interior that would make the Chinese blush ➤ **VERDICT** The best driving supermini. Even 1.0 models feel like hot hatches in waiting

FIESTA ST ★★★★☆

Feisty Fiesta is fluent where the flat-footed Focus falls. Trying say that quickly with the 180bhp Ecoboost on full reheat: f-ing fatiguing ➤ **VERDICT** Definitive affordable hot hatch spoiled only by square-wheels ride

ECOSPORT ★★★★☆

Third-world hand-me-down is no fun to drive and reasonably roomy interior ruined by a daft side-opening tailgate. Nissan Juke monsters it ➤ **VERDICT** A rare Blue Oval balls-up channelling the complacent Mk5 Escort spirit

FOCUS HATCH/ESTATE ★★★★☆

Looking all the better for its 2014 refresh, the Focus shows Ford's chassis engineers know their stuff. So it's just the designers who have lost it ➤ **VERDICT** Great to drive but the Golf is a more polished destination for your dough

FOCUS ST ★★★★☆

Storming turbo four sounds so good it's almost more than your ears can take. Also more than the front tyres are able to deal with ➤ **VERDICT** Exciting, but so's contemplating throwing yourself from the Shard. Buy a GTi

MONDEO HATCH/ESTATE ★★★★☆

Delayed so long dealers will soon be doing MOTS and PDIs at the same time. Huge space and you can even have the 1.0 Ecoboost ➤ **VERDICT** Everybody wants them new-fangled SUVs these days, but this is a great family car

KUGA ★★★★☆

Fine-handling MPV now available with a 178bhp diesel – but not a dashboard that doesn't look like an earthquake in a switchgear factory. Small boot ➤ **VERDICT** Good, but top-end versions stray into X3/Evoque territory

C-MAX/GRAND C-MAX ★★★★☆

> More a roomier Focus than full-blown MPV, C-Max delivers driving pleasure to blot out family pain. 7-seat Grand version gets rear sliding doors > **VERDICT** Rivals are roomier, but none is better to drive. Just pretend it's the wife's

S-MAX ★★★★☆

> Exploits latest Mondeo's undercrackers to full effect. Pricey, but still the best of the seven-seaters to drive > **VERDICT** Toys include electric everything and speed-correcting cruise control. Harder to beat than FC Barcelona

MUSTANG ★★★★☆

> GI Henry's finally been posted to Europe and he's cutting in on the TT's dance. At last gets multi-link rear end, but rear-space could be better > **VERDICT** EcoBoost 4-cyl torque but tedious; it's the V8 you want, if not its 18mpg thirst

GALAXY ★★★★☆

> Goose to the S-Max's Maverick, new Galaxy is based on the same Mondeo-derived platform. Just as high-tech, but more spacious > **VERDICT** Great if you need a big 7-seater – fits adults in all rows with no human rights violations

GINETTA**G40 ★★★★☆**

> Pint-sized road-legal racer. Two models: G40R (civilised version, with carpets) and GRDC (actually a race car with numberplates) > **VERDICT** Tiny, twitchy and top fun. Pick the £35k GRDC and get free entry to race series

HONDA**JAZZ ★★★★☆**

> Brilliantly packaged supermini with typical genius mismatch of brain and social skills. Ordinary performance, extraordinarily unrefined > **VERDICT** If a Skoda Fabia had seats this smart, other superminis would call it a day

CIVIC HATCH/TOURER ★★★★☆

> Wilfully different, won't-fully-want-one Golf rival whose big draw is its origami rear seats. 167mph Type-R lands soon (expect big skid marks) > **VERDICT** Capacious wagon makes most sense but a Golf is still more satisfying

CIVIC TYPE R ★★★★☆

> Holy turbos! They've created a monster. Furious new 2.0-litre Type R produces 306bhp and hits 167mph. Scorched 'Ring included > **VERDICT** Did Dr Frankenstein do the exterior design? Live with the looks, love the performance

ACCORD SALOON/TOURER**DIES SOON**

> Ancient second-rate Mondeo rival dies any day, killed off by the market's move to SUVs – and ambivalence to overpriced ordinary saloons > **VERDICT** Mid-table League 1 side to the Mondeo's Champions League winner

HR-V ★★★★☆

> It took Honda 10 years to build a second HR-V, and you're still left wondering why they bothered. Almost wilfully generic > **VERDICT** Jazz platform's magic packaging the only saving grace

**LEXUS RX****"Loves motorways, but steering's so remote it lives in a shepherd's cottage in the Hebrides"****CR-V ★★★★☆**

> Roomy but unremarkable SUV with a choice of two- or four-wheel drive. Unlike most Hondas won't need ear defenders to drown out road noise > **VERDICT** Kuga has the chassis, Qashqai has the style, but neither is as practical as CR-V

HYUNDAI**I10 ★★★★☆**

> Five-door city car that balances mature driving experience with strong value – even if it's not as cheap as it was. Five-year warranty, too > **VERDICT** Basic motoring done just well but with a dash of style. Mid-spec 1.0 our choice

I20 ★★★★☆

> No Fiesta to drive, but it's not as far off as you'd think, while the refinement and comfort offer plenty of compensation for the plain interior > **VERDICT** Like a pair of corduroy slippers: comfy but rather suggests you've given up on sex

I30 HATCH/TOURER ★★★★☆

> Where the current crop of Hyundais got serious – which means it's now in need of a facelift as the mainstream moves ahead again > **VERDICT** 'Tries hard but lacks imagination' would be the i30's school report card

I40 SALOON/TOURER ★★★★☆

> Vast Mondeo rival with huge boot and lots of kit. Facelift resembles a lizard with an Audi grille for a mouth > **VERDICT** Nearly-but-not-quite mainstream alternative plays value card well

IX20 ★★★★☆

> Compact MPV and Kia Venga's ugly step-sister; roomy but ultimately forgettable > **VERDICT** Sorry, what were we talking about?

IX35 ★★★★☆

> Slabby looks but neat to drive and nicely built, making the ix35 a worthy Kuga rival. All-new Tucson replaces it soon > **VERDICT** Not bad at all, but replacement should be even better

SANTA FE ★★★★☆

> Biggish SUV has always led Hyundai's assault on the European market from the front. Comfortable, self-assured and easy to live with > **VERDICT** A Hyundai you can choose without shame. Looks fresher than Waitrose parsnips

I800 ★★★★☆

> Massive van-based people carrier that'll seat eight and still have space for their luggage. Ideal for part-time airport mini-cabbers > **VERDICT** It is what it is: a van with seats in. But it's a nice van

GENESIS ★★★★☆

> Luxury saloon hamstrung by unsuitable petrol engine and they-must-be-joking price tag. Has silly

new winged badge and handles like a waterbed > **VERDICT** Step one of Hyundai's move upmarket. Well, it worked for Infiniti. Oh, wait...

INFINITI**Q50 ★★★★☆**

> Another American-market Japanese premium product that's lost in translation. Shame it wasn't lost at sea on the way over. Hybrid mega quick > **VERDICT** Like a tiny speck of fluff the Mercedes C-class casually brushes from its sleeve

Q60 COUPE/CABRIO ★★★★☆

> Nissan 370Z after a back, sack 'n' crack. No diesel but V6 sounds ace and S models (4wd and LSD) are tidy in the bends. Looks dated > **VERDICT** Not without merit, but without a hope of talking us out of buying a BMW 4-series

Q70 ★★★★☆

> Does it look like a rubbish Maserati QP, or a slightly cooler Daewoo Leganza? Either way it's a novelty act without the novelty > **VERDICT** Worth considering over a 5-series, but only if Harald Quandt ran off with your wife

QX50 ★★★★☆

> Blandly-styled EX crossover got a new badge but precious few new fans. Well equipped, but costly to run and not that great to drive > **VERDICT** Nothing to see here people, move on – to your local BMW dealer and its excellent X3

QX70 ★★★★☆

> Striking jumbo jeep comes with more kit than a Knight Rider convention but the lavish cabin is too small and the fuel and tax bills anything but > **VERDICT** Taxi for Infiniti! Porsche's Cayenne has this one covered, old timer

JAGUAR**XE ★★★★☆**

BEST IN CLASS > Straight-bat styling hides exotic aluminium chassis and class-leading handling. Bit tight on space though, and engines not a high point > **VERDICT** Rivals are better packaged but this is the driver's car in the class and a proper little Jag

XF ★★★★☆

> Second-gen XF now 75% aluminium, looks like an over-inflated XE; bigger inside, smaller outside, still a great steer > **VERDICT** Diddy diesels mope more than a dairy; insert your own joke about cats and cream

XFR ★★★★☆

> Massively capable but terminally tweed-wrapped M5 rival that's £10k cheaper, and 20% less rabid, than the real thing. Occasional traction > **VERDICT** Great chassis; great shame the superb XFR-S looks like such a dog's dinner

XJ ★★★★☆

FACELIFT SOON > Questionable styling but unquestionably excellent to drive and with a cabin fit for a Bentley. Lwb cars get extra 125mm of rear room > **VERDICT** Get a blindfold and guide dog to help you to and from the door and you'll love it

XJR ★★★★☆

> Absurdly track-ready limo builds on already ballistic XJ Supersport, but bumps power up to 543bhp and tightens chassis (at expense of ride) > **VERDICT** More rare-groove than Elvis's first acetate, but spectacular – if you're up front

F-TYPE COUPE/ROADSTER**★★★★★**

> Posh pauper's Aston sounds superb, goes well too. Forget basic V6 and choose from V6S and mental V8S. Now with manual and 4wd options > **VERDICT** So nearly sublime, but Cayman/Boxster duo cost less, entertain more

F-TYPE R ★★★★☆

> Ferocious rear-drive coupe-only R gets 543bhp and uprated chassis for an even sharper drive that's less knife-edge than the V8S soft-top > **VERDICT** Unlike other F-type coupes, this one is £5k more than equivalent cabrio, but feels it

F-TYPE PROJECT SEVEN**★★★★★**

> Looks a little too much like the D-type equivalent of the old folks you see standing at the back of rock gigs, but still the best F-type yet > **VERDICT** Pray for sunshine: it's got 567bhp and the roof takes 20min to erect. Sold out

JEEP**RENEGADE****★★★★★**

> Strange but true: yoof-targeting junior Jeep is built in Italy alongside Fiat 500X that donates its platform. Even stranger: it's not terrible > **VERDICT** Lower spec models outdriven by rivals; only the top Trailhawk cuts it in the rough

CHEROKEE**★★★★★**

> Gimlet-eyed Disco post-Fiat Cherokee looks like the banjo-playing inbred from Deliverance. Despite generous kit count, we'd leave it on the porch > **VERDICT** Feels too cheap to be premium, too pricey/ugly to beat Qashqai

GRAND CHEROKEE**★★★★★**

> Proper off-road credentials backed up by sensible running costs, but feels cheap. Ludicrous SRT version demolishes 62mph in five dead > **VERDICT** Makes sense at \$30k in the US, but doesn't drive or feel like a premium car

WRANGLER**★★★★★**

> Incredible off-road, and much better than a Defender on it, but that's like saying Pol Pot was more benevolent than Stalin. 2.8 Merc diesel best > **VERDICT** When North Korea nukes us, this cold war cast-off will be all that's left moving

KOENIGSEGG**AGERA****★★★★★**

> Evolution of Lex Luthor's original CC8S supercar features twin-turbo 5.0 V8 and carbon fibre wheels. R version even runs on E85 biofuel > **VERDICT** Yahoo! Yin to Volvo's yawning yang keeps Sweden's car output balanced

THE GOOD, THE BAD & THE UGLY.

KIA

PICANTO ★★★★☆

► Tough-looking budget Korean mini twinned with less funky Hyundai i10. Three-pot 1.0 is slow but sweeter than 1.25 four. Smart interior, small boot ► **VERDICT** You'll never benefit from the 7-year warranty and VW's Up is better to drive

RIO ★★★★☆

► Long on space, short on enjoyment, life with a Rio is no carnival. Diesel refinement will have you driving to a favela in the hope of a carjacking ► **VERDICT** White goods car gets the basics right but there are too many better rivals

CEED HATCH/SW/PROCEED

FACELIFT SOON

► Good-looking Korean Golf wannabe is big on equipment and not bad to drive. Ceed is 5dr, Proceed gets 3, and SW is the wagon ► **VERDICT** Entirely credible. Europe's best is still a step ahead, but for how much longer?

SOUL ★★★★☆

► Improved second-gen chunky spunkly SUV better to drive but ride and noise suppression poor. Petrol version rubbish, but much cheaper ► **VERDICT** A Korean with character but other SUVs are more rounded (in both senses)

OPTIMA ★★★★☆

► Eye-catching, but dynamically second-rate Mondeo clone much more appealing for last year's new chairs 'n' dampers refresh. Diesel only ► **VERDICT** Not as bad as its scarcity suggests

VENGA ★★★★☆

► Weird sit-up supermini-cum-MPV packs Focus space into near-city-car dimensions. Hard to get comfy though. 1.4 petrol best ► **VERDICT** Too pricey and too ordinary to drive for us to care

CARENS ★★★★☆

► Big, versatile, value-packed seven-seater. Go diesel - 1.6 petrol is wheezier than emphysema-riddled asthmatic with a punctured lung. ► **VERDICT** For all its pseudo-premium Euro aspirations, this is the stuff Kia still does best

SPORTAGE ★★★★☆

► Sharply-styled SUV with pillars so fat it's like driving a zootrope. Well equipped, but not that roomy, or much fun to drive. Choice of 2- or 4wd ► **VERDICT** Strong on paper, but Qashqai and Mazda CX-5 work harder for your coin

SORENTO ★★★★☆

► Ambitious new flagship SUV reckons it's a real Land Rover rival. Now bigger than ever, and so is the price: up to £40k. 2.2 diesel only engine. ► **VERDICT** Impressive, but lacks the badge and performance of genuine premium off-roaders

KTM

X-BOW ★★★★☆

► 22nd century Ariel Atom from Austria's barony motorbike maker mixes carbon construction with hardy Audi turbo'd 2.0 four ► **VERDICT** Big money, big grins, but single-seat BAC Mono gives more racecar-like experience

LAMBORGHINI

HURACAN ★★★★☆

► Way more accomplished Gallardo successor twinned with new Audi R8. New dual-clutch 'box mandatory. Steer clear of optional 'Dynamic' rack ► **VERDICT** Beats the new 488 for aural excitement, but Ferrari retains its edge when it comes to everything else

AVENTADOR/SV ★★★★☆

► The F12 may be better in every respect, but this is what a supercar should look like. Limited run Aventador SV closes that gap with shocking power and agility ► **VERDICT** SV is the one to have. Sub-7min 'Ring lap makes the hybrid hypercar crew look stupidly expensive

LAND ROVER

DEFENDER ★★★★☆

► Like Churchill's second term as prime minister, 60-year-old workhorse is anachronistic and out of touch, yet tolerated out of sentiment ► **VERDICT** Roast beef. Concorde. Arkwright's Mill. Six wives. Rain. Defender. Dies this year

DISCOVERY SPORT ★★★★☆

► 'Educated, professional luxury SUV desperately seeking decent diesel engine.' Ingenium replied. Happy ever after? ► **VERDICT** Comfy silence a promising start. We'll know it's love when they get the interior decorators in

DISCOVERY ★★★★☆

► Middle England metal edifice brilliantly capable at driving over lefthy hunt saboteurs, mud and street furniture. Only one diesel ► **VERDICT** Perfectly balances picnicking luxury, farming legwork and small-c conservatism

RANGE ROVER EVOQUE ★★★★☆

► The definitive posh mums' SUV. Expensive price offset by superb RVs although wedgy styling means interior space of a half-squeezed toothpaste tube ► **VERDICT** No car has been more perfectly pitched at its intended audience

RANGE ROVER SPORT ★★★★☆

► As luxurious as a Range, as practical as a Disco, better looking than an Evoque and could follow a Defender cross country. Add in impressive handling and ballistic SVR and diesel versions ► **VERDICT** Nobody likes a show-off

RANGE ROVER ★★★★☆

► A benchmark in luxury SUVs. V6 diesel perfectly acceptable, supercharged V8 petrol hilarious ► **VERDICT** The perfect car for smuggling cash to Switzerland, skiing, turning up at a ball, game shooting and being smug

LEXUS

CT ★★★★☆

► STEER CLEAR Pig-ugly premium Prius a bizarre mix of decent handling, woeful performance and a ride so poor it makes a black cab feel like an S-class ► **VERDICT** Rubbish. Wouldn't merit a single sale if company car tax bills were less CO2-focused

IS ★★★★☆

► Sharp-suited, well-specced 3-series rival finally gets decent rear space. Good chassis, but 250 V6 irrelevant, and frugal hybrid hobbled by nasty CVT ► **VERDICT** So close. Give this a proper auto 'box and it would be right up there

GS ★★★★☆

► GS makes twin-pronged hybrid-only attack on German territory. 450h quicker and handles; 300h is the one to buy (with your company's money) ► **VERDICT** 300 makes company car sense, but don't expect to take the B-roads home

LS ★★★★☆

► Monstrously expensive but so refined it makes a library feel like a sound-off competition (which the Mark Levinson hi-fi could probably win) ► **VERDICT** Built for those in the back, but the S-class makes every seat worth buying a ticket for

NX ★★★★☆

► Trumps Audi Q5 with a fabulous interior and arrest-me (for persecuting curves) exterior design. Fwd or 4wd with electric motor at rear ► **VERDICT** Doesn't work as a driver's car, so take the NX300h hybrid over faster, costlier NX200t

RX ★★★★☆

► Genteel giant Jeep powered by hybridised V6. Loves motorways but steering's so remote it lives in a shepherd's cottage in the Hebrides ► **VERDICT** A CO2 champ and tax beater, but rival diesel SUVs are the real fuel sippers

RC/RC-F ★★★★☆

► V8 IS-F successor has the raw ingredients, but chef fried them up with too much lard. With no diesel or hybrid, regular RC's a bit player ► **VERDICT** 4/M4 rival five years late for the party

LOTUS

ELISE ★★★★☆

► Reminds just how connected cars used to be. Slothful base 1.6 reminds how they used to go, too, so pick 1.8. Alfa 4C is a pricey, pale imitation ► **VERDICT** Still sensational, but a 10-year old example does the same job for half the price

EXIGE ★★★★☆

► Gym-bunny Elise with supercharged V6, but the same beautifully connected unassisted steering. Stripped Cup version is Hethel's GT3 RS ► **VERDICT** The best Lotus, but Cayman GTS and new GT4 match it every step

EVORA 400 ★★★★☆

► Thoroughly refreshed Evora loses its looks but gains easier access and thumping supercharged 400bhp ► **VERDICT** Better yet, the chassis is Lotus at its sparkling best. Sublime, but you'll still buy a Cayman

McLAREN

650S ★★★★☆

► Original 12C showed real promise, 650S delivers on it in spades. Trouble is the new 675LT now makes the 650S feel like a poor relation... ► **VERDICT** Still two reasons to buy over the 675LT: it's £60k cheaper and not sold out

675LT ★★★★★

► NEW ENTRY What happens when you upgrade 33% of the 650S? Absolute bloody magic. 666bhp, stiffer suspension, faster gearshifts, quicker steering and lighter by 100kg, whatever deal Woking's done with the devil, it's worked ► **VERDICT** This is the McLaren you've been looking for

P1 ★★★★★

► £1m hybrid hypercar with aero straight from McLaren's F1 brains. All sold, and if you haven't got one you can't have track-only GTR either ► **VERDICT** Astounding, but LaFerrari feels more special (as it should for £400k more)

MASERATI

GHIBLI ★★★★☆

► A Maserati for the price of a 5-series! A bad-riding one with a disappointing interior, but still, a Maserati! ► **VERDICT** The best badge on your company car list, but not the best car

QUATTROPORTE ★★★★☆

► Supersaloon-cum-limo can't decide what it wants to be. Looks great, handles better, rides worse. Twin-turbo V8 rapid; diesel a stopgap ► **VERDICT** Buy it to stretch its legs, not because you want to kick back and stretch your own

GRAN TURISMO/GRAN CABRIO ★★★★☆

► Four genuine seats a rarity in this class, but fill them and you'll regret choosing the weedy 4.2 over the 4.7 at the first sniff of a hill ► **VERDICT** Podgy, pretty, practical GT for folks who hate four-door faux coupes. And luggage

GT MC STRADALE ★★★★☆

► Defies hulking 1770kg mass (and that's after a 110kg diet) and modest 444bhp to deliver an engaging driving experience. Epic noise ► **VERDICT** Massively underrated. A GT3 for an Italian lothario with a 'Ring season pass

MAZDA

2 ★★★★☆

► SHOT-IN-THE-ARM supermini packs value, handling and looks, leaving sweatmarks on the shirts of VW Polo marketing team. Still a bit Poundland inside ► **VERDICT** Under-radar Fiesta threatener gatecrashes the top table

3 HATCH/SALOON/ESTATE ★★★★☆

► Another left-field, right-on Mazda that's great to drive and cheap to run. Like shifting gears? You'll love the 118bhp unbloon 1.5. If not, go diesel ► **VERDICT** Don't buy a family hatch until you've tried one. Oh, a Golf? Apart from that

5 ★★★★☆

► ANCIENT off-the-pace MPV that looks like it's been side-swiped by a kamikaze dispatch rider. Roomy and reasonable to drive, but just not! ► **VERDICT** Large 'n' loaded but there're too many fresher rivals to warrant wasting your wedge

6 SALOON/TOURER ★★★★☆

► BOSS won't let you have a 3-series? Double your digit and try this impressive alternative. Handles well but rides like the tyres have DTs ► **VERDICT** Swoopily styled, tax friendly, entertaining alternative to po-faced Passat

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CX-3 ★★★★☆

> Late arrival to the compact crossover party, but worth a look thanks to smart, premium cabin and crisp, engaging drive. Pity about the firm ride > **VERDICT** Pricey, but better than most and well equipped. Ideal MX-5 social life support truck

CX-5 ★★★★☆

> Crisply styled, commodious crossover is stonking value. Handles tidily but ride and refinement could be better. Pick base fwd diesel > **VERDICT** MX-5 aside, this is the best thing to come out of Mazda for years

MX-5 ★★★★☆

> Smaller than the '89 original, and in real terms half the price. 1.5 sweet but a little slow; 158bhp 2.0 quicker but charismatically challenged > **VERDICT** Brilliantly uncomplicated budget sports car. Dink the GTI for this

MERCEDES**A-CLASS ★★★★☆**

FACELIFT SOON > Cool in the manner of a skinny, 20-a-day fashionista – the body is writing cheques its heart can't cash. Expensive, cramped and brittle to drive > **VERDICT** Don't be swayed by the looks, A3 and 1-series do the job better

A45 AMG ★★★★☆

FACELIFT SOON > Madly turbocharged four-pot with 355bhp and four-wheel drive. Goes like a banker who knows the game is up; almost as expensive > **VERDICT** Resets the bar for super hot hatches. Doesn't mean it's the one to have

B-CLASS ★★★★☆

> Posh MPV big brother to the A-class misses out on the looks and the charisma, but is far more homely and just as technically savvy > **VERDICT** So boring the BMW 2-series Active Tourer actually begins to make sense

CLA SALOON/SHOOTING BRAKE ★★★★☆

> CLS clone based on the A-class, now including the Shooting Brake swoopy estate. Lacks gravitas of the former and sex appeal of the latter > **VERDICT** Just because you can make something smaller doesn't mean you should

C-CLASS SALOON/ESTATE ★★★★☆

> Latest C impresses with mini S-class looks and almost all the same on-board tech. Denies muttering it wishes the 3-series would drop dead > **VERDICT** BMW still better to drive, but if you want a relaxing techno cocoon, this is it

C-CLASS COUPE ★★★★☆

REPLACED SOON > Currently still a hangover from the previous generation C-class. And no matter how good the party, a hangover is still a hangover > **VERDICT** Wait for the new version, due later in 2015

C63 AMG ★★★★☆

> New C63 ditches the old 6.2 V8 for the new twin-turbo 4.0 from the AMG GT. Four-door only; M3 last seen looking for a doctor's note > **VERDICT** Mega traction and one of the best turbo engines on sale. Gets our vote

E-CLASS SALOON/ESTATE ★★★★☆

REPLACED SOON > Large, lovely, but overshadowed by the allure of the CLS – unless you want to look like a German taxi driver > **VERDICT** The most old-school Merc, which has a certain appeal

E-CLASS COUPE/CONVERTIBLE ★★★★☆

> CLK-Replacing Coupe and Convertible are still C-class derived – and old C-class at that – despite the name. Both seat four in decent comfort > **VERDICT** Restrained and tasteful approach to mid-size luxury. Feeling their age

E63 AMG ★★★★☆

> 5.5-litre V8 twin-turbo with up to 577bhp and rear-wheel-drive only in the UK. Like a BMW M5, but without the artificial enhancement > **VERDICT** Bit of a blunt instrument. Spectacular soundtrack means you won't care

CLS/SHOOTING BRAKE ★★★★☆

> The word 'coupaloon' is banned from these pages. Which is fine, because we're all slightly in love with the glamorous Shooting Brake > **VERDICT** Second-gen version of the original

four-door coupe continues to lead the pack

S-CLASS ★★★★☆

BEST IN CLASS > Enormously technically accomplished, with camera-guided ride quality and stacks of safety kit. Maybach and Pullman variants immensely flash > **VERDICT** Makes 7-series/A8 seem like toys. Captains of industry should insist on it

S-CLASS COUPE ★★★★☆

> 5m-long two-door with stunning interior and optional suspension that leans into bends like a motorbike. Barking mad indulgence > **VERDICT** Buy it as a tribute to your own personal wealth. Don't expect to get let out at junctions

S63/S65 AMG ★★★★☆

> Twin-turbo 577bhp V8 and 621bhp V12 S-class variants, because being richer than the world isn't enough and you need to out-drag it, too > **VERDICT** S63 V8 is bonkers, S65 V12 utterly certifiable. Does your chauffeur deserve it?

GLA ★★★★☆

> Confused A-class on stilts with lifestyle pretensions and unnecessary surplus of interior air vents. GLA45 AMG simply unnecessary > **VERDICT** A-class for the bewildered. Maybe you thought you were ordering a GLC?

GLC ★★★★☆

> GLK replacement project, now available in right-hand drive. Sounds like you shouldn't care, but the interior might just make you moist > **VERDICT** Rivals are cheaper, better to drive – GLC makes you feel special inside

G-CLASS ★★★★☆

> Cold War relic that's so solidly built it could ram a bank vault. Obscene special editions a growing – literally – Mercedes obsession > **VERDICT** You shouldn't want one, but... Will outlast any Defender. And possibly the planet

GLE / GLE COUPE ★★★★☆

> Rebadged M-class is heavy, ponderous and depressingly cheap inside. Plug-in hybrid plays the tech card, new Coupe an alternative to X6 > **VERDICT** As you were: it's perfectly adequate in a class dominated by the outstanding

GL-CLASS ★★★★☆

> Massive seven-seater SUV makes the Audi Q7 look demure. Actually off-road capable. Lacks super-lux appeal of latest Range Rover > **VERDICT** Americans love 'em. Make of that what you will...

SLK ★★★★☆

> Small, folding hardtop 'sports car', engines range from a clattery diesel to a non-turbo V8 with cylinder deactivation. Neither of which particularly appeals > **VERDICT** Boxster so much better even your hairdresser could tell

SL ★★★★☆

> Large, folding hardtop 'sports car'. No diesel option, but you can have a twin-turbo V12. Ferrari California T now stealing its lunch money > **VERDICT** Fine for cruising that boulevard. If it wasn't for the aforementioned Ferrari

AMG GT ★★★★☆

> SLS replacement is smaller (just), cheaper (considerably) and blessed with a 4.0-litre twin-turbo V8 that will blow your mind > **VERDICT** It's got the muscle but maybe not the finesse; 911 buyers should still think twice

MG**MG3 ★★★★☆**

> Tough-looking, spacious supermini has handling that lives up to the promise of that badge. As does the woeful build, crap engine and concrete ride > **VERDICT** The Chinese are coming! But so far they've only got to Tajikistan

MG6 ★★★★☆

> Previous woeful also-ran now updated with more efficient diesel, more kit and a hefty price cut > **VERDICT** Better, but remains condemned by ghastly steering, buzzy engine. Wrong badge, wrong car, wrong owners

MINI**HATCH 3DR/5DR ★★★★☆**

> Bigger and gawkier and less charming, but lovely BMW engines are smooth and peppy,

while ride has improved without ruining handling. Five-door in danger of being practical

> **VERDICT** A better ownership proposition than ever, even if you love it a little less

COOPER S/JCW ★★★★☆

> Up-sized BMW 2.0-litre four-pot-powered 228bhp JCW most powerful Mini ever. Terrific turbo fun, if a tad overwrought and synthetic > **VERDICT** Beware the options list, lest it lead to bullion robberies and perilous dangling over cliffs

CLUBMAN/COUPE/CONVERTIBLE ★★★★☆

> A Mini with a toupe, the Coupe is just loopy. Convertible makes more sense but time running out for last-gen models before the next flight of fancy occurs > **VERDICT** Coupe doesn't add much driving character over standard Mini

COUNTRYMAN/PACEMAN ★★★★☆

> Bigger Minis for people who don't want slightly smaller (but still quite big) Minis. Paceman has fewer doors for those phobic of apertures. Niche > **VERDICT** Please, please make it stop. It's all just so wrong

MITSUBISHI**MIRAGE ★★★★☆**

STEER CLEAR > Looking for the ideal car to crash into a shopfront when staging a 'Look at this OAP selecting reverse rather than first!' YouTube sensation? This is it > **VERDICT** Slow, rough, harsh, bad. Sadly it's not a mirage, it's real

ASX ★★★★☆

> Forgotten among the slew of small SUVs, the ASX is rather good now, with decent ride and sharper looks. Selectable 2/4wd is handy, but engine is ratty and gearbox slushy > **VERDICT** More workmanlike than many, and better for it

SHOGUN ★★★★☆

> Great value old-school workhorse for those whose workplace is covered in mud, oil or bomb craters. Big, noisy diesel, chunky underpinnings and reliable, with hose-down cabin > **VERDICT** If you don't need this car, you don't need this car

OUTLANDER ★★★★☆

> Workmanlike cabin and infotainment invented when Steve Jobs was in nappies. But the PHEV is a plug-in ahead of the game, offering 30 electric miles > **VERDICT** The biggest-selling EV on the market shows underdogs can bite back

MORGAN**3-WHEELER ★★★★☆**

> Comfortable as riding over Niagara Falls in a barrel and equally sane. Not as quick as it feels, but quick enough for a three-wheeler on bike tyres > **VERDICT** Brilliant Caterham alternative without the macho trackday posturing

AERO ★★★★☆

> Drop-top was first of the new-era Morgans and goes it alone since Aero Supersports, Coupe and Squiffy Perkins bought it at the Somme > **VERDICT** Two worlds collide. And with 367bhp they may not be the only ones doing the colliding

PLUS 4/FOUR FOUR/ROADSTER ★★★★☆

> Entry-level Mog still with 'traditional' ash frame and 'traditional' (ie, awful) dynamics. Four-seat 4/4 is surprise eco champ: 44mpg > **VERDICT** Cheap, considering the craftsmanship, even at £33k, but if you want an old car, buy one!

PLUS 8 ★★★★☆

> Don't be fooled by tally-ho styling, 8 is built on 'modern' bonded and riveted Aero chassis. Fidgety like a child with worms > **VERDICT** Classic Morgan style, modern BMW V8 poke, manners like a five-term Borstal veteran

NISSAN**MICRA ★★★★☆**

STEER CLEAR > As alluring as a dentist's waiting room, and just as noisy – modern Micra is a shadow of its former self and unworthy of your interest > **VERDICT** Judge this book by its cover: it's dull to drive and just as cheap inside

JKU ★★★★☆

> Mould-breaking compact crossover; you think it would look that if the mould hadn't broken? Cheap interior and so-so dynamics belie the hype > **VERDICT** Does it still count as 'different' if everybody's got one?

NOTE ★★★★☆

> Like a Honda Jazz with middle-age spread, this is a small, practical MPV-hatch with limited aspirations of greatness > **VERDICT** An automotive cardigan: deeply uncool but good at what it does

LEAF ★★★★☆

> Gawky looking purpose-built electric car proves that life after the internal combustion engine won't be that bad. Gets better with every revision > **VERDICT** Worth at least a cursory glance on your way to the BMW i3 showroom

PULSAR ★★★★☆

> So dull it can only be explained by a conspiracy theory claiming it owes its entire existence to a long-range Qashqai sales-boost strategy > **VERDICT** Buy a Focus. Or a Golf. Or a Ceed. Or an Auris. Okay, maybe not an Auris...

QASHQAI ★★★★☆

> Second-gen crossover carries on exactly where the original left off: meandering ominously in the middle lane to the tune of 'are we there yet?' > **VERDICT** Likeable, with a side order of resting on its own laurels

X-TRAIL ★★★★☆

> The X-Trail used to be a rough-tough off-roader apparently designed on an Etch-a-Sketch. Now it's a Qashqai put through a photocopier at +10% > **VERDICT** It still ain't exciting. But it's probably going to sell a lot better

GT-R ★★★★☆

> A monster in every respect, from the way goes to the amount it weighs. 4wd system practically sentient, and it gets faster every year > **VERDICT** No longer the supercar of the PlayStation Generation, now simply a supercar

PAGANI**HYUARA ★★★★☆**

> Spectacular cottage (villella?) industry supercar with active aero, AMG-built 720bhp twin-turbo V12 and an interior more decadent than a Roman orgy > **VERDICT** Want have, can't have: they're all sold. But a roadster is rumoured

PEUGEOT**ION ★★★★☆**

> Rebadged Mitsubishi iMiev seats four, and just as well: with leasing bills at £400/month you'll need passengers to chip in > **VERDICT** Congestion-charge, road-tax and petrol-bill exempt. Zero-rated for driving pleasure too

108 ★★★★☆

> Pug-faced city car. Go for 82bhp 1.2: the 68bhp 1.0 is so slow we were all monkeys when it set off and it still hasn't hit 60mph > **VERDICT** Reasonable no-frills city car but boot and rear space tight. Skoda Citigo is better

208 ★★★★☆

> Refresh more than just a prettier face as dynamic update adds handling chops to 208's interior chic > **VERDICT** Pug's recovered that VaVaVoom from the back of the sofa. No, wait – that's the other lot

308 HATCH/SW ESTATE ★★★★☆

> Handsome, hushed 308 at its best when eating motorway miles, or when you're watching it out of the window of your Golf. Fiddly touchscreen > **VERDICT** Hatch isn't up to scratch, but roomier SW wagon is worth a look

508 SALOON/ESTATE ★★★★☆

> Little-seen XL Pug with unconvincing cod German accent. Hybrid4 gets 4wd via 37bhp 'leccy motor on rear wheels > **VERDICT** RXH is poor-man's Audi Allroad. Rest of range is padding on your company car list

PARTNER TEPEE ★★★★☆

> Spacious, versatile Tepee so useful it could almost be a van. Funny, that. Slothful, spartan, but drives okay and 'real' MPVs can't match

THE GOOD, THE BAD & THE UGLY.

practicality > **VERDICT** Make your own clothes? Live in a Yurt? This is the car for you

2008 ★★★★☆

> Welly-wearing 208 is front-drive only, though 'Grip Control' ESP divides torque left to right. Quality cabin, big boot, but Renault Captur prettier > **VERDICT** Strong, but it's late to the party and wearing a frock made out of coal sacks

3008 ★★★★☆

> Get Pininfarina on the phone, this is a code red emergency! Revolting styling totally undermines this roomy and entirely reasonable crossover > **VERDICT** Hard to work up much of a trouser tent when the Qashqai looks so much sexier

5008 ★★★★☆

> Woah! Do they still make that?! Who'd have thought? Stacks of space and at a decent price, but an S-Max is a vastly more satisfying steer > **VERDICT** Sound medium-MPV choice - if you live 34,678 miles from your nearest Ford dealer

RCZ ★★★★☆

> Rough-riding coupe gets a rough ride at the hands of Audi's infinitely more polished TT. Decent handling, messy cabin, useless back seats > **VERDICT** There are better coupes, but the styling suckers you, get a brisk RCZ 200

RCZ R ★★★★☆

> Sweet bespoke chassis, Torsen LSD and mega 266bhp 1.6 that's both quick and capable of topping 40mpg. But £32k for a Peugeot... > **VERDICT** RCZ R says Peugeot still knows how to make a great car. They should do it more often

PORSCHE

BOXSTER ★★★★☆

BEST IN CLASS > Sublime. Base 2.7 costs less than £40k but unless you like sitting on milk crates and being outrun by hot hatches, go for the 3.4S > **VERDICT** Cheaper and more versatile than a Cayman, this is surely Porsche's best sports car

BOXSTER SPYDER ★★★★☆

> It's no drop-top Cayman GT4, but with the same 911-derived 3.8, a manual gearbox and a special roof that no longer requires a team of boy scouts it is still mega > **VERDICT** Worth the extra £7k over the Boxster GTS? Why are you even asking that question?

CAYMAN ★★★★☆

BEST IN CLASS > Tin-top Boxster with the same twin-boot practicality, more power and even sharper handling. Makes F-type look podgy and pricey > **VERDICT** The definitive 24/7 coupe. Badge snobbery only reason to spend £20k more on 911

CAYMAN GT4 ★★★★☆

> Junior GT3 is first Cayman to get more power than current 911. 380bhp, manual 'box, LSD and a grin wider than a Glasgow smile > **VERDICT** Porsche finally admits that the Cayman and not the halo 911 is its real sports coupe

911 ★★★★★

FACELIFT SOON

> Wears a cravat these days (leaves the ripped jeans to the Cayman). Base 3.4 needs working; GTS wants to. Reborn Targa coolest of the lot > **VERDICT** Still pushes the buttons, and still the only proper sports car to carry the kids too

911 GT3/GT3 RS ★★★★★

> New engines, PDK-only tranny, electric steering and rear steering too for this generation. Epic drive, but aero-heavy RS may be a touch too hardcore > **VERDICT** Half the price of a 'proper' supercar, but every bit as good, and then some

918 ★★★★★

> Epic 4wd hybrid can waste GTIs with 6sec 0-62mph electric mode, then slay Lambs by adding 600bhp V8. Superb electric steering, too > **VERDICT** Almost overshadowed in the P1-LaFerrari posturing war, but easily as good

MACAN ★★★★★

> Baby Cayenne is even better than dad - and E-voque. Base car with Golf GTI 2.0 makes no sense when S and S Diesel are pennies more > **VERDICT** GT3 RS for trackdays, Cayman GT4 for weekends, this for everything else. Sorted

CAYENNE ★★★★★

> Porsche's cash-cow is a prize German Angus these days, handsome and the best SUV to drive. Turbo V6 S quick, too quiet; Diesel S dynamite > **VERDICT** Not convinced it's a proper Porker? Turbo S laps the 'Ring in sub-8min

PANAMERA ★★★★★

> Super-sized supersaloon hamstrung by looking like a prom-night 911 stretch limo. Great interior but more buttons than a giant's cardigan > **VERDICT** Expensive, but no other luxury car drives this well. Turbo a powerhouse, GTS purer

PROTON



SAVVY ★★★★★

> Oddball city car with refinement of a funfair generator, cramped cabin and sub-Chinese plastics. 50mpg sounds okay, but rivals do 70 > **VERDICT** Proton's best car easily merits its one-and-a-half-star rating. Oh, we don't do half stars

SATRIA NEO ★★★★★

> Lotus-tweaked chassis okay, rest makes Ingmar Bergman's catalogue look like a rom-com box set. Screen rake means pinhead room only > **VERDICT** 'The ultimate hot hatchback,' Proton claims. They missed a word out

GEN-2 ★★★★★

> Risible, unrefined Focus-sized hatch with a steering wheel mounted so inexplicably low driving feels like performing a kettle bell exercise routine > **VERDICT** If you buy one, leave your brain to science. We need to know

RADICAL

SR3 SL ★★★★★

> Properly type-approved (street legal) SR3 gets a 300bhp blown Ford 2.0 instead of a bike motor, a heater and even a 12v socket. It's almost lavish! > **VERDICT** Toned down for occasional road use but still hairier than a cave man with hypertrichosis

RXC TURBO ★★★★★

> Play out those Le Mans fantasies on the commute with this Peterborough-built Polaris. Sequential 'box welcome in town like an EDL demo > **VERDICT** When you've outgrown your Caterhams and 911 GT3s, here's the answer

RENAULT

TWIZY ★★★★★

> Part electric scooter, part social experiment, it's easy to love the doorless Twizy, especially on balmy evenings along La Croisette. Grimy days in Doncaster a tougher ask > **VERDICT** Transportation of the future, if it's never wet in the future and you like chatting at traffic lights

ZOE ★★★★★

> Delightful little EV, now with increased range and cabin like a spa waiting room. Overall purchase now offered alongside confusing battery leasing option > **VERDICT** Zen-like calmness replaces nagging range anxiety

TWINGO ★★★★★

> Rear-engined rwd runabout isn't as nippy as it sounds, but is roomy, with clever smartphone connectivity. More cheeky than sister Smart, and cheaper > **VERDICT** Lower-power version with '80s F1 Turbo paintjob the way to go

CLIO ★★★★★

> Welcome return to form for the five-door Clio with even boggo ones looking handsome, a well sorted cabin and sprightly driving qualities. Three-cylinder turbo petrol a (slowish) hoot > **VERDICT** Fiesta more fun, Clio more stylish

CLIO RS ★★★★★

> Remember when Clio RS was king of the hill? No. Probably for the best, because even new, more powerful RS Trophy can't off-set awful auto 'box > **VERDICT** Brings its own Trophy but still doesn't win. Rumoured RS Wooden Spoon pure speculation

CAPTUR ★★★★★

> It's a Clio on stilts - but that's not necessarily a bad thing. No 4x4 pretensions means focus is on personalisation. Good engines. No Juke to drive > **VERDICT** Technicolour clown car if you're not careful with the spec, otherwise okay

MEGANE HATCH/TOURER/CABRIO ★★★★★

REPLACED SOON > Despite a facelift, Megane is creaking like an octogenarian's hips. Sport Tourer offers photocopy repairman practicality, Coupe-

Cabriolet is Bournemouth retirement fodder > **VERDICT** 'Drive the Change' is Renault's slogan. Could do with driving it faster

MEGANE RS ★★★★★

> RS 265 turns average stock into hot-hatch genius, with stripped cabin, manual 'box and raucous 2.0 Turbo. Spartan, more powerful Trophy-R is bonkers > **VERDICT** What happens when RenaultSport, not marketers, build cars

GRAND SCENIC ★★★★★

REPLACED SOON > Contraction failed, shotgun marriage, working harder to pay for it, old friends don't come round any more, debt, and a Grand Scenic > **VERDICT** Tired, lacking spark, plodding through each day. And that's just the car...

KADJAR ★★★★★

> Did Nissan leave the Qashqai parts bin store 'Kadjar', or did Alliance partners Renault break in like crossover copycat ninjas? Either way, this is the outcome > **VERDICT** And actually, it's not a bad one. Good looking, smooth riding, but disappointing interior plastics

ROLLS-ROYCE

GHOST ★★★★★

> A little posher, with more bespoke options to hide BMW-ness, new gearbox for the V12 and minor fettling to the metal. > **VERDICT** Perfectly built and pitched and more individual. A Phantom for millionaires not billionaires

WRAITH ★★★★★

> A 624bhp twin-turbo V12 sporting vehicle that drives like no other. Dismisses distance but would never lower itself to squeal through bends > **VERDICT** Whisper it, but Rolls has produced an amazing driver's car

PHANTOM ★★★★★

BEST IN CLASS > Simply the best luxury car money can buy, with a cabin to embarrass a superyacht, opulence to make Donatella Versace blush (if she could), and a turbo V12 pulling you along. Not that you'll hear it > **VERDICT** Every car on earth starts with ambitions of being a Phantom

SEAT

MII ★★★★★

> Tedious-looking city-box is far less funky than Renault's Twingo but roomier and good to drive. You don't look at the mantelpiece, and all that > **VERDICT** VW Up more desirable, pretty Skoda Citigo cheaper. Siesta time in Seat's prod dept?

IBIZA HATCH/SC/ESTATE ★★★★★

> Angular, angry-looking supermini, possibly because it knows how much better a Fiesta is to drive. It's not bad though, and ST wagon is huge > **VERDICT** Not as sporty as it likes to think, but holding up in face of newer, better-driving rivals

LEASE ACADEMY: SMALL, QUITE SEXY SUVS

Every month we trawl the leasing brokers to find the hottest deals. Think before you buy!

Audi RS Q3 £482

Combine Audi's smallest SUV with the turbo five-pot from the TT RS, and enjoy every set of traffic lights
Spec: 2.5 turbo petrol, 4wd, 7spd auto, 335bhp, 32.8mpg, 203g/km
List price: £45,540

£482/month for 48 months
Initial payment: £2894
Mileage allowance: 10,000/year
Via: Carlisle Audi



Mercedes GLC250d SE £423

Up the initial payment to £3383 and the monthly rate on Merc's fancy new 4x4 drops to £376

Spec: 2.1 turbodiesel, 4wd, 9spd auto, 201bhp, 56.5mpg, 129g/km
List price: £36,105

£423/month for 48 months
Initial payment: £2538
Mileage allowance: 10,000/year
Via: All Vehicle Contracts



Porsche Macan S Diesel £544

You can lease one of these for £14/month less, but the initial payment jumps nearly £1500...

Spec: 3.0 turbodiesel, 4wd, 7spd auto, 254bhp, 44.8mpg, 161g/km
List price: £44,636
Initial payment: £3364
Mileage allowance: 10,000/year
Via: GB Vehicle Leasing



Range Rover Evoque SE £322

Fwd is surely fine for one of these, but you might want SE Tech trim - budget another £29/month

Spec: 2.0 turbodiesel, fwd, 6spd, 148bhp, 65.7mpg, 113g/km
List price: £30,200
£322/month for 48 months
Initial payment: £1937
Mileage allowance: 10,000/year
Via: CVSL Limited



IBIZA CUPRA ★★★★☆

> Bags more attitude than Polo GTI, and 180bhp turbo'd, supercharged 1.4 means it's not short of pace and hates fuel stops. DSG only, sadly
VERDICT Fast and feisty junior hot hatch, but outdriven by key rivals. Make ours a Fiesta ST

TOLEDO ★★★★☆

STEER CLEAR > OAP special whose sole interesting feature is that while it looks like a boring saloon, it's actually a boring hatch! Massive interior >
VERDICT This and identical Skoda Rapid do it out for UK's dullest car. Czech please!

LEON HATCH/ESTATE ★★★★☆

> Bigger third-gen Leon gets the same MQB platform as Golf and A3, but only 150+bhp cars get multi-link rear. Ride and cabin plastics brittle
VERDICT Sound, value-focused in-house Golf rival. ST wagon with 1.4TSi gets our cash

LEON CUPRA ★★★★☆

> Stupidly rapid 280's mid-range pull makes Golf GTI sister look like a tickled up 1.2. Front-drive, so expect 300 miles from a set of fronts
VERDICT Huge amount of hot hatch for the cash – or hot wagon, in case of stylish Cupra ST

ALTEA ★★★★☆

> Remember when all Seats had grilles like merkins? The genital garnish is alive and well in this old MPV. Longer XL's boot is a third bigger
VERDICT Handles okay but the cheap plastic interior has all the ambience of a township hut

ALHAMBRA ★★★★☆

FACELIFT SOON > Seat's biggest box has seven real seats. Such good family wheels even CAR's rear-drive-loving Bent (out of shape) Barry became an MPV convert >
VERDICT Brilliant big bus does everything VW Sharan sister can for less lolly

SKODA**CITIGO ★★★★☆**

> Skoda's all but identical version of the VW Up and Seat Mii. Pick your badge – they're all well packaged but too noisy and slow >
VERDICT Cheaper than the Up, but not by much. Hyundai i10 also worth a look. Yes, actual advice!

FABIA HATCH/ESTATE ★★★★☆

> Very mature little supermini with bodywork creases a Corby trouser press would be proud of. Estate version ideal for Jack Russells
VERDICT Roomy, well made and unexciting – like a low-rent VW Polo. Which is what it is

RAPID HATCH/SPACEBACK

STEER CLEAR > Long, narrow notchback hatch is automotive equivalent of Eastern Europe refugee. Big boot. Spaceback is shorter, more 'stylish', still dross >
VERDICT Unless you've got a lot of potatoes and no other way to carry them, just don't

OCTAVIA HATCH/ESTATE ★★★★☆

> Basically the same as a Golf and A3 underneath, but bigger, cheaper and more functional inside. Hot VRS versions old-school ballistic fun. 4x4s practical >
VERDICT It's a lot of car for the money

SUPERB SALOON/ESTATE ★★★★☆

> Now so vast inside it echoes. Sharp lines, stacks of kit and double the number of umbrellas. Shame about the dull interior and stiffer price >
VERDICT All the family car you'll ever need. Only bigger

SUPERB ★★★★☆

NEW ENTRY > Now so vast inside it echoes – new Superb gets sharp lines, stacks of kit and double the number of umbrellas. Shame about the dull interior and stiffer price >
VERDICT All the family car you'll ever need. Only bigger

ROOMSTER ★★★★☆

> Hipster lifestyle accessory without the hip. Which is no surprise as it's getting on a bit now. Flexible seating = loads of room for people and kit >
VERDICT Modern equivalent of a Fiat Multipla: ugly but useful. We'd call it Igor

YETI ★★★★☆

BEST IN CLASS > Ikea wardrobe on wheels – so practical you'll wonder how you ever lived without it. Good news is you don't have to assemble it yourself >
VERDICT Bigger engines are better.

Choose the Outdoor version for that rugged look. Grrr

SMART**FORTWO ★★★★☆**

> Chunkier new ForTwo has middle-age spread compared to the last one. Wider, with a much better ride, higher quality cabin and slicker auto, it is older, but wiser >
VERDICT Less of a compromise, and still a brilliant city runabout

FORFOUR ★★★★☆

> Renault/Merc tie-up means ForFour is accomplished with a classy cabin, although ludicrous pricing seem at odds with budget city car buyers >
VERDICT Sister car Twingo is more than two grand cheaper. Work that out

SSANGYONG**KORANDO ★★★★☆**

> Borderline rubbish to drive but more practical than the Teflon-coated trousers you're probably wearing if you're giving it serious consideration
VERDICT Huge, handy and hellish value, but we'd have a pre-reg Qashqai or CX-5 any day

REXTON W ★★★★☆

> Like that weird 1960s Izal bog roll, Rexton kind of does the job, but is hard and shiny to the touch and not that nice to use. Deals better with mud >
VERDICT Plenty of space, but dynamically, like Izal, it's gone down the pan

TURISMO ★★★★☆

> Marginally less odious than the old Rodius, but every bit as practical, this giant 7-seater is slower than the Crossrail boring machine >
VERDICT Has mini-cab written all over it, or soon will, which will hardly help disguise the ugliness

TIVOLI ★★★★☆

> There's no getting away from it: Korea's also-ran carmaker (...) has built itself a bit of a contender. Great value, spacious and – shock – well-finished inside >
VERDICT Enough to erase decades of dross? No. But it's a good start

SUBARU**IMPREZA ★★★★☆**

> Yes, it still exists beyond WRX and STi. No, you don't want one. Boggo Impreza reduced to a 1.6 petrol hatchback only with optional CVT. Shudder >
VERDICT Have you got a brand new combine harvester? It's probably a better drive

WRX/STI ★★★★☆

> Sorry WRX, I'm breaking up with you. It's not you, it's me. No, it is you, it's definitely you and your crashy ride, nasty dash and inflexible engine >
VERDICT Brilliant, on its day, in its day. But that was yesterday, so let's call it a day

XV ★★★★☆

> Hopelessly expensive half-way SUV half-wit. Suspension thumps so intrusive you'll think the Stomp musical is performing in the wheelarches >
VERDICT In the tough crossover market Subaru makes up the numbers, and the price

FORESTER ★★★★☆

> Appealingly functional square-rigger the kind of crossover that existed before we had 'lifestyles'. Good on road, great off it, but not cheap >
VERDICT Old-school Subaru honest, charming. Tweed cap, pipe, sheep flock optional

OUTBACK ★★★★☆

> The unloved Legacy's only UK legacy is this Allroad-style crossover. New for spring 2015, it's huge inside and the 4x4 look isn't all for show >
VERDICT Still more niche than a cragside crevice. Dependable, not desirable

BRZ ★★★★☆

> Gloriously simple but under-nourished rear-drive Boxer coupe, crying out for Lichfield Imports' 280bhp supercharger kit. GT86 twin is £500 more >
VERDICT Loveable car we wanted them to make but you don't want to buy

SUZUKI**CELERIO ★★★★☆**

> Braking-phobic city car otherwise spacious, full of kit and cheap. Three-cylinder petrol only plus all the handling vim of a B&Q Value

Spec Expert**EQUIP THE PERFECT SKODA SUPERB ESTATE**

Is the latest Skoda Superb Estate still a poor man's Passat? We spec the best, and compare it to the VW

SKODA SUPERB

It's massive, cramming in 1950 litres, but is the latest Superb load lugger still a bargain? Looking good – literally – so far...
Starting price: £19,840

Most popular engine is the 148bhp 2.0 TDI, which means upgrading to SE trim – adding dual-zone climate and adaptive cruise to the already generous DAB radio, autonomous city braking and XDS.
Running total: £23,290



Here's a trick: SE Business costs the same, but includes sat-nav, leather/alcantara and clever mobile phone signal boosting as standard.
Running total: £23,290

Want full leather? It's just £200. But we'd rather have front and rear heated seats (£400), Crew Protect pre-crash safety and rear side airbags (£435), and a rear parking camera (£300). Three-zone air-con is £300. 20% of buyers are opting for Business Grey (£535). Safe but dull.
Running total: £25,660

So, that's a bigger, better looking car for nearly £5k less.
Grand total: £25,660

VW PASSAT

Superb's older, more established sibling. But the Passat Estate hauls less (1780 litres), starts at four grand more, and puts you to sleep as soon as you've looked at it.
Starting price: £23,870

There's a 148bhp 2.0 TDI SE Passat, too – which is the bare minimum for autonomous braking in the VW and still only comes with manual air-con. Three-zone climate is an extra £595, XDS another £185.
Running total: £28,515

There's also a nav-equipped SE Business Passat. But this still only gets manual air-con and the seats are made of cloth. Eugh.
Running total: £29,170



Front and rear heated seats in the Passat costs £1030 – but includes the three-zone climate, so actually only adds £435. Rear camera is £310, Reflex Silver paint £540. Want leather, though? That'll be £1795.
Running total: £30,455

Okay, so the interior's nicer – but you've got to really want the VW image, surely?
Grand total: £30,455

TOTAL PRICE: £25,660

TOTAL PRICE: £30,455

THE GOOD, THE BAD & THE UGLY.

wheelbarrow ➤ **VERDICT** Dowdy and rowdy. Be glad you've got DAB and a cupholder

SWIFT ★★★★☆

➤ An unsung hero, and not just the excellent 136bhp Sport. Handles well, spacious and cheap. 1.2 petrol soon to be replaced by Dualjet motor ➤ **VERDICT** Buy one and challenge anyone who questions your choice to a fistfight

SX4 S-CROSS ★★★★☆

➤ The cheap way to clone a Qashqai. Won't score any points for style, in fact you might hide it at the back of the school car park. Diesel is the best bet – you'll have to stop and get out less ➤ **VERDICT** A crossover to be cross over

JIMNY ★★★★☆

➤ A box with a four-wheel-drive system bolted onto the bottom, and a 1.3-litre engine hanging out front. There are seats too ➤ **VERDICT** The swamps the Jimny can easily drive over were probably primordial when it first launched

VITARA ★★★★☆

➤ Two-tone cross-dresser to rival the Juke, with a handsome body and usefully economical diesel engine. Cabin could do with some work though ➤ **VERDICT** Ruttin' Rhinos and pink paint are a thing of the past: it's a serious family car now

TESLA

MODELS ★★★★★

➤ Embarrassing car makers everywhere who said it can't be done, the staggering electric Model S has near 400-mile range, alluring infotainment and in the P85d, hyperdrive ➤ **VERDICT** Star Trekking, across the universe, in the Tesla Model S along with Elon Musk...

TOYOTA

AYGO ★★★★☆

➤ Bright-looking, stupidly-cramped city car with a characterful three-pot motor is as cheap to run as it feels. See also (ropey) Citroën C1, Pug 108 ➤ **VERDICT** As 'Up'hill struggles go, battling VW with this is like climbing north face of the Aygo

YARIS ★★★★☆

➤ Sizeable but soulless, Yaris can't match rivals' dynamics or pocket luxury feel. Clever but costly hybrid version slashes fuel bills and boot space ➤ **VERDICT** Largely joyless supermini last to be picked for the school football team

AURIS ★★★★☆

➤ Most Aurises sold are hybrids, mainly 'cos rest of the range is pants and other makers haven't got their hybrid acts together yet ➤ **VERDICT** Only worth picking as company wheels if you have a Starbucks-like aversion to paying tax

PRIUS ★★★★☆

➤ Practical, thanks to big cabin and boot, not the think-of-a-number mpg figure. Now available as a plug-in, for a premium ➤ **VERDICT** The original tofu eater offers as little to the taxman as to the guy behind the wheel

AVENSIS SALOON/TOURER ★★★★☆

➤ Journeyman company car is like a small oil-field drill: does little well – despite new BMW diesels. Tourer marginally more stylish ➤ **VERDICT** White goods. Also available in light grey, medium grey, dark grey. Not beige, oddly

VERSO ★★★★☆

➤ Safe, stodgy seven-seater with snore-worthy chassis and a big-selling BMW-sourced 1.6 diesel that feels like half its horses are asleep too ➤ **VERDICT** Does as little badly as it does well, but easy meat for Ford C-Max or Citroën Picasso

RAV4 ★★★★☆

➤ Was a soft-roader pioneer back in '94 but has settled for fluffy slippers in its old age. Trump card is boot big enough for a casino table ➤ **VERDICT** Roomy, reasonable, unremarkable. More dynamic SUVs deserve your cash

LAND CRUISER/V8 ★★★★☆

➤ Actually two distinct models but both proper bare-knuckle ladder-frame brawlers that wouldn't know a latte if you spilt it on their rigger's boots ➤ **VERDICT** Awful, but if we were stranded in the desert we'd trust it over a Range

GT86 ★★★★★

➤ Identical to Subaru BRZ but dealers have actually sold more than three. Same delectable handling, shameful dearth of go from unblown 2.0 ➤ **VERDICT** Sensational to drive, but such hard work only a handful of folk have found out

VAUXHALL

VIVA ★★★★☆

➤ It may look like it was dropped before it had set, but is comfy, roomy and refined for a city car, and comes with plenty of standard kit ➤ **VERDICT** More generous than it may appear at first glance. We'd still buy an Up, though

ADAM/ADAM ROCKS ★★★★☆

➤ Obese Fiat 500 wannabe with huge options list and comedy naming sh*tick. Adam S warm hatch worth a thought; Rocks crossover faffoid ➤ **VERDICT** Revitalised by new 1.0-litre turbo triple. Buy a paper bag and try it

CORSA ★★★★☆

➤ Made-over Corsa looks like a prime candidate for When Plastic Surgery Goes Bad, but it is more refined and better to drive. 1.0T a good motor ➤ **VERDICT** Fiesta still cheerfully waving from way out in front. The git

CORSA VXR ★★★★☆

➤ Luton's granny mugger now a grand cheaper and smoother round the edges. An extra £2.4k gets you a slippery diff and hardcore suspension. Thug life ➤ **VERDICT** Honed hooligan. Fiesta ST keeps its crown, but there's no shame in picking one of these

ASTRA HATCH/ESTATE ★★★★☆

➤ The girl next door – often unnoticed but actually quite a looker, easily available and with some punchy engines, too. Needs a tidy-up inside ➤ **VERDICT** Never quite on par with Focus or Golf; new one coming soon

ASTRA GTC/VXR ★★★★☆

➤ Three-door Astra coupe sneaks enough to stand comparison to the Scirocco, makes the Focus look like a lard-arse. VXR fearsomely fast but moody ➤ **VERDICT** A desirable Vauxhall! If only the inside was as nice as the outside

CASCADA ★★★★☆

➤ Brave attempt to take on German compact cabriolets, but chassis has less integrity than Sepp Blatter. Good value if you don't mind the image (What image? Exactly!) ➤ **VERDICT** Marty McFly wouldn't. Doc Emmett Brown just might

INSIGNIA SALOON/TOURER ★★★★☆

➤ Much improved by mid-life facelift, still handsome, spacious and loaded with kit. And then along came the all-new Mondeo and Passat ➤ **VERDICT** An out-of-date car in a dying sector, latest rivals leaving it behind

MERIVA ★★★★☆

➤ Suicide is painless, goes the theme tune to M*A*S*H, clearly not referring to tight car parks and the Meriva MPV's back-to-front rear doors ➤ **VERDICT** Nice idea, but does anyone care about mainstream MPVs anymore?

ZAFIRA TOURER ★★★★☆

➤ Large MPV with slick seating arrangement and much more spacious than the old bus it replaced. Struggles in the face of S-Max greatness ➤ **VERDICT** Accomplished but out-flanked by crossovers' rise to dominance

MOKKA ★★★★☆

➤ Pardon? What? Sorry – you're saying the noisy diesel engine has been replaced? Marvellous. What about the ride and handling? Oh ➤ **VERDICT** Chunky outside, intricate inside, wearing to drive. Want to like it. Don't

ANTARA ★★★★☆

➤ Old-fashioned SUV based on the Chevrolet Captiva. Chevrolet has subsequently quit selling cars in the UK altogether. You do the maths ➤ **VERDICT** Comprehensively outclassed by Kuga etc. Felt dated at launch in 2007

VXR8 ★★★★☆

➤ 577bhp Aussie import that's £20k cheaper than an M5. Optional auto 'box' bid to add sophistication akin to serving lager in cut crystal. But who gives a 4X? ➤ **VERDICT** Big, brutish charm. But row your own, mate

AMPERA ★★★★☆

➤ Dies SOON Futuristic range-extender tech and funky looks, but sales volumes too low to make re-engineering it for Euro 6 emissions worthwhile ➤ **VERDICT** Eco car killed by eco regs. We're not even joking. Expiry date September 2015

VOLKSWAGEN

UP ★★★★☆

➤ Box on wheels with VW badge is the kind of city car the Japanese have been building for years, except much better quality ➤ **VERDICT** Hyped as a revolution and hardly that. But a spacious small car with a strong image

POLO ★★★★☆

➤ Bothered by the Fiesta's Airfix plastics? Buy a Polo instead – brilliant engines, bank-vault build quality and almost as good as the Ford to drive ➤ **VERDICT** Small capacity turbo petrels are a riot, and increasingly efficient, too

POLO GTI ★★★★☆

➤ Baby GTI right down to the tartan seats, now with bigger bails. Vastly improved by introduction of manual gearbox. Surprisingly strong value ➤ **VERDICT** Where's the nearest Byron Burger drive-thru?

GOLF HATCH/ESTATE ★★★★☆

➤ BEST IN CLASS Quality, refinement and safety put this at the top of the family car class. So it's a swot, basically. And we all know swots are boring ➤ **VERDICT** The obvious choice. A3 offers extra flash for a bit more cash, Focus better to drive

GOLF CABRIOLET ★★★★☆

➤ The swot's sexy top-dropping sister promises open-air thrills but remains a sensible homebody at heart. Your parents would approve ➤ **VERDICT** Or will you always be thinking about the A3 Cabriolet you almost bought?

GOLF GTD/GTI/R ★★★★☆

➤ BEST IN CLASS GTD is your dad in running shoes. GTI is your dad when he was wild, young and free. R is your dad having a mid-life crisis. All are ace ➤ **VERDICT** After seven generations, VW has this hot-hatch thing nailed. Buy without regret

GOLF SV ★★★★☆

➤ The artist formerly known as the Golf Plus. And by 'artist' we mean medium-sized MPV. The car you always knew the Golf would grow up to be ➤ **VERDICT** Not a bad choice, but now the BMW 2-series Active Tourer is breathing down its neck

JETTA ★★★★☆

➤ Utterly anonymous and the only VW people will assume is a Skoda. Based on old Golf platform ➤ **VERDICT** Take a good, long, hard look at yourself. And snap out of it

BEETLE HATCH/CABRIO ★★★★☆

➤ Although better to drive it lacks the design purity of its predecessor and the charm of the original. Unusually indulgent by VW's standards ➤ **VERDICT** Even wannabe retro hipsters are, like, so totally over this cynical marketing exercise, man

SCIROCCO ★★★★☆

➤ Old Golf in a sultry dress. Scrubs up well. Fun, friendly, and more generous in the back than Audi TT ➤ **VERDICT** Ballistic R version definitely worthy; low-power diesel not so much

PASSAT SALOON/ESTATE ★★★★☆

➤ Interior design and refinement so good it shames some limos, cutting-edge kit and elegant looks. If only it wasn't so dull to drive ➤ **VERDICT** Mega mile-muncher for the undemanding. Aesthete to Mondeo's athlete

CC ★★★★☆

➤ BEST IN CLASS Previous Passat on a night out – but we aren't talking clubbing and a kebab. Dangerously close to being genuinely sexy, even if it is a CLS knock-off ➤ **VERDICT** Like all the best knock-offs, it's almost as good and much cheaper

PHAETON ★★★★☆

➤ REPLACED SOON Aka VW's folly. The luxury car for people who don't want to be seen owning a luxury car. Which is how many people? Exactly ➤ **VERDICT** Once a mighty feat of engineering over good sense. Old, outclassed and irrelevant

TOURAN ★★★★☆

➤ Dies SOON This is not just a van-like people carrier. This is a Volkswagen van-like people carrier. Doesn't go camping unless there's a yurt involved ➤ **VERDICT** Only buy if you definitely don't want any more kids. C-Max so much better

SHARAN ★★★★☆

➤ FACELIFT SOON Large seven-seater sliding-door people carrier. Nice enough but made to look silly by the all-but-identical and significantly cheaper Seat Alhambra ➤ **VERDICT** Get the same car from Seat for less. Or try the Ford Galaxy

TIGUAN ★★★★☆

➤ REPLACED SOON Superbly well-engineered and undemanding compact SUV. Anonymous in a reassuring kind of way. Big seller, for good reason ➤ **VERDICT** Like a Golf on stilts, it does the job – very well

TOUREG ★★★★☆

➤ The people's Porsche Cayenne. Do the people still want their own Cayenne? Well, it is nearly £10k cheaper... ➤ **VERDICT** Big, comfy, competent SUV. Great on and off road

VOLVO

V40 ★★★★☆

➤ Smart Swedish effort in a sector dominated by Germans with efficient D4 engine and impressive kit. But it's a bit bloated in seat, suspension and steering feel ➤ **VERDICT** Sitting uncomfortably between Golf and A3. A rock and hard place

S60 ★★★★☆

➤ A sporting saloon that, well, just isn't thanks to steering that seems to be bored with driving. Serious identity crisis ensues, although R Design models look smart enough ➤ **VERDICT** Volvo gambled on a 3-series rival and lost

V60 ★★★★☆

➤ A Frenchman who can't cook. A Jackson who can't dance. A Volvo estate which can't carry much. No such things against the very nature of being exist, do they? ➤ **VERDICT** Handsome, safe, efficient estate hamstrung by one issue...

V70 ★★★★☆

➤ Make every V60 designer live in the boot of a V70 until they understand Volvo estates. Ageing, slow, and now diesel only, but as comfy as a rest home ➤ **VERDICT** Please Volvo, never veer from this template, not for fashion or economy

S80 ★★★★☆

➤ Numb steering, warty ride, feeling you should have bought a 5-series, decent, strong diesel engines ➤ **VERDICT** The S80 is like carpet slippers: it does pottering about well, but is ill-suited to anything else

XC60 ★★★★☆

➤ Space, sharp looks, competitive pricing, family safety and a wipe-clean cabin. Only grumbles are grumbly D5 diesel engine and high CO2 ➤ **VERDICT** Volvo really is good at SUVs. XC60 hard to beat, even by much newer competitors

XC70 ★★★★☆

➤ A V70 in breeches, with raised ride height and 4x4 option. Avd starts at less than 40 grand, which is good value if you find SUVs crass ➤ **VERDICT** If you don't like having a dozen brace of shot pheasant in your boot, don't buy one

XC90 ★★★★☆

➤ It was worth the (long) wait: luxurious seven-seat interior, a smorgasbord of clever safety tech, efficient four-cylinder and plug-in drivetrains, and refined drive ➤ **VERDICT** The handsome new XC90 is one of the most complete cars on sale at any price

ZENOS

E10/E10S ★★★★☆

➤ Flyweight track car with aluminium backbone chassis and carbonfibre recycled from fighter jets, created by ex-Caterham brains trust ➤ **VERDICT** Glorious handling, ferocious speed from Ecoboost turbo S – a bright future beckons

B.R.M

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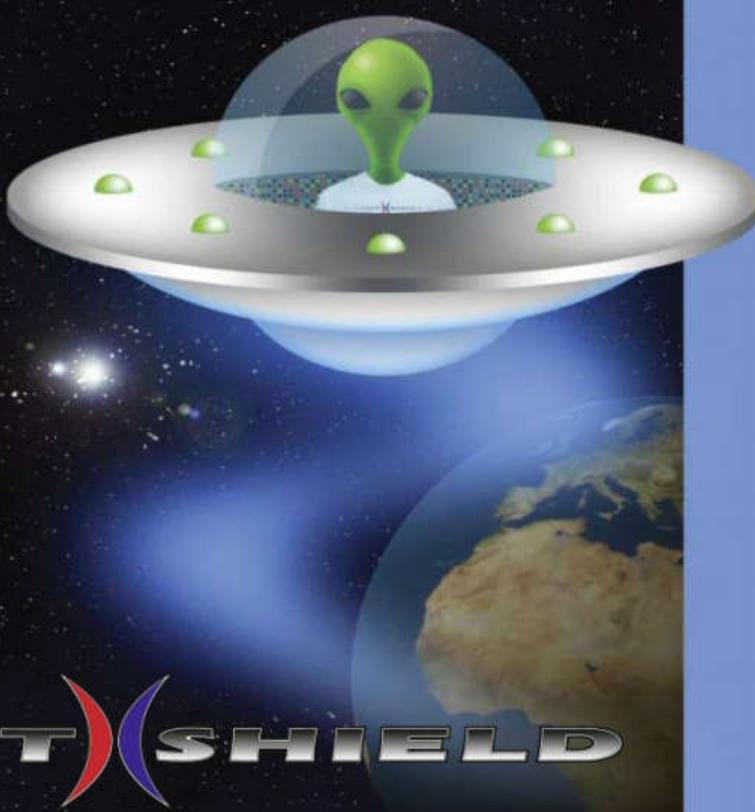
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95 BJ	I CSF	EKI	I FKP	6 GSJ	I JDV	I KLD	I LPD	1 MVH	I PEK	I RKW	TDS 6	I VMM	I YAW	
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AI4 WAY	AI4 WAY	Allaway	DAT 7A	Datta	H32 RON	Herron	MER 21K	Merrick	S34 NCE	Seance
ALT 74F	ALT 74F	Altaf	DAW IID	Dawid	HOII TER	Holter	MIII ONK	Million	SES 70N	Seston
ALV 35S	ALV 35S	Alves	D342 DEN	Dearden	HOII OUR	Honour	MOII ONY	Moalon	SET 7H	Seth
AMB 83R	AMB 83R	Amber	DEN 13Y	Denby	HOU IT	Hoult	M00 I2S	Moors	SHE II4A	Sheila
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AUB 123Y	AUB 123Y	Aubrey	DII KES	Dukes	HUII AND	Hulland	MUII DAY	Munday	SIO UPS	Soups
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B412 KER	Barker	EGE 270N	Egerton	Egerton	I55 LER	Issler	MUT 770N	Button	574 MPS	Stamp
BAR 1I3Y	Barney	ELY I	Ely	Ely	JAC 3K	Jacek	NAD 33N	Nadeen	574 MPS	Stamp
B47 NES	B47 NES	Baynes	EVE 237T	Everett	J46 GON	Jargon	NAN 5	Nans	574 MPS	Stamp
B36 LEY	B36 LEY	Begley	EXE 73R	Exeter	JAS 94L	Jaspal	NEE 14N	Neelan	574 MPS	Stamp
BEL 50N	BEL 50N	Benson	FAI2 EST	Fairest	JEI4 NNE	Jeannie	NEE 14N	Nesbitt	574 MPS	Stamp
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BII 200	BII 200	Bingo	FAII ACY	Fallacy	K34 TON	Keaton	NOR 44A	Nora	574 MPS	Stamp
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BLA IIK	BLA IIK	Blank	FAR 2R	Farr	I KEV	Kev	OBE 21	Obee	574 MPS	Stamp
BLA IIK	BLA IIK	Bleach	FAR 24H	Farrah	KHA 413D	Khaled	OD 1	Od	574 MPS	Stamp
BOA 77S	BOA 77S	Boats	F42 RER	Farrer	KI32 NAN	Kieran	OFF 16E	Office	574 MPS	Stamp
BOI 111	BOI 111	Bolger	FAT I	Fat	KI12 WAN	Kirwan	OKS 4IIA	Oksana	574 MPS	Stamp
BON 35Y	BON 35Y	Bones	FI3I DEN	Fielden	KI76 HEN	Kitchen	OLE 42Y	Oleary	574 MPS	Stamp
I30 WER	I30 WER	Bower	FII1 NCH	Finch	L421 SSA	Larissa	ON2 0NS	Onions	574 MPS	Stamp
B12 AKE	B12 AKE	Brake	FOG 427Y	Fogarty	I4 WES	Lawes	ORII ENT	Orient	574 MPS	Stamp
BRI4 ANS	BRI4 ANS	Brian	FOO 7E	Foote	LAY 3R	Layer	OSB 802N	Osborn	574 MPS	Stamp
BRI2 ERS	BRI2 ERS	Briers	FI28 NCH	French	L424 RUS	Lazarus	OVE 270N	Overton	574 MPS	Stamp
B215 TOL	B215 TOL	Bristol	FRO 23N	Frozen	LAZ 3333	Laze	PAC 3E	Pace	574 MPS	Stamp
B206 DEN	B206 DEN	Brogden	FRY IIP	Fry Up	LEN IE	Lenie	PAG 6E	Page	574 MPS	Stamp
B20 OOK	B20 OOK	Brook	FUR 5E	Fusey	L309 ARD	Leopard	PAB 8Y	Parby	574 MPS	Stamp
BR05 TER	BR05 TER	Broster	FUS 555Y	Fussey	LOR 377A	Loretta	PAR 70N	Parton	574 MPS	Stamp
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CARES	CARES	Carey	GAM 3E	Game	DIO 1ER	Lover	PAT 216E	Patrice	574 MPS	Stamp
CAR 1I3Y	CAR 1I3Y	Carney	GAI1 MER	Gammer	LOW 2IIE	Lowrie	PEI 1 DER	Pender	574 MPS	Stamp
C477 ELL	C477 ELL	Cattell	GI4 UGE	Gauge	LUS 73D	Lusted	PEI 1 DER	Pender	574 MPS	Stamp
CAW 13Y	CAW 13Y	Cawley	G33 SON	Geeson	LYA 1L	Lyall	PEI 1 DER	Pender	574 MPS	Stamp
CEA 53R	CEA 53R	Ceaser	G30 RDY	Geordie	LYN 37E	Lynette	PI4 GUE	Plague	574 MPS	Stamp
CHA 12M	CHA 12M	Charm	GII BEY	Gilbey	MAG III	Magill	PI4 GUE	Plague	574 MPS	Stamp
CHI 1EER	CHI 1EER	Cheer	GII 6NN	Ginn	MAI2 EAD	Mairead	PI4 GUE	Plague	574 MPS	Stamp
CHE 3N	CHE 3N	Chen	GIA 1ND	Gland	MAII ARD	Mallard	PI4 GUE	Plague	574 MPS	Stamp
COL 13IE	COL 13IE	Cobbler	GOA IS	Goals	MAII SER	Manser	PI4 GUE	Plague	574 MPS	Stamp
COII FER	COII FER	Colfer	I GOB	Gob	MAR 417N	Maralyn	P205 SER	Prosser	574 MPS	Stamp
COL 142D	COL 142D	Collard	G10 BEY	Gobey	MAR 23K	Marek	PAT 216E	Patrice	574 MPS	Stamp
COM 13Y	COM 13Y	Comley	G20 32S	Gorge	MAR 27IN	Martin	P205 SER	Prosser	574 MPS	Stamp
COII BOY	COII BOY	Conboy	GOW 32S	Gowers	M444 TES	Mates	P205 SER	Prosser	574 MPS	Stamp
COP 53Y	COP 53Y	Copsey	G234 VES	Greaves	MAY 606K	Mayer	P205 SER	Prosser	574 MPS	Stamp
COR 137T	COR 137T	Corlett	G213 VES	Grieges	MAY 32S	Mayers	P205 SER	Prosser	574 MPS	Stamp
COR 2R	COR 2R	Corr	G120 VES	Grogan	MAY 606K	Maycock	P205 SER	Prosser	574 MPS	Stamp
COW 13Y	COW 13Y	Cowley	G120 VES	Groves	MAY 606K	Maycock	P205 SER	Prosser	574 MPS	Stamp
CIO YNE	CIO YNE	Coyne	GUT 51E	Gutsie	MCH 41IE	McClean	P205 SER	Prosser	574 MPS	Stamp
CRE 3W	CRE 3W	Crew	HAN 44A	Hana	MCL 41R	McLair	P205 SER	Prosser	574 MPS	Stamp
CRII LLY	CRII LLY	Crilly	HAI 111	Hansen	MCL 41D	McLeod	P205 SER	Prosser	574 MPS	Stamp
CII20 OKS	CII20 OKS	Crooks	HAI2 LOW	Harlow	MCL 41D	McLeod	P205 SER	Prosser	574 MPS	Stamp
CRII MPS	CRII MPS	Crumpt	HAR 93R	Harper	MEE 3K	Meek	P205 SER	Prosser	574 MPS	Stamp
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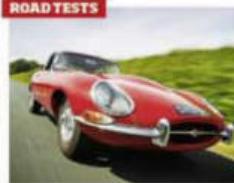


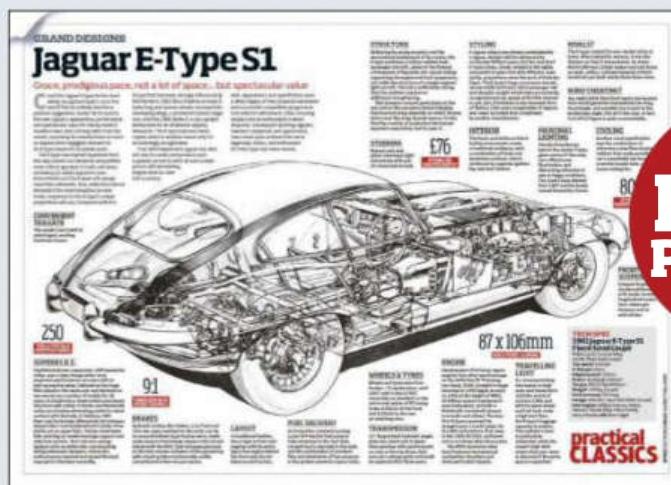
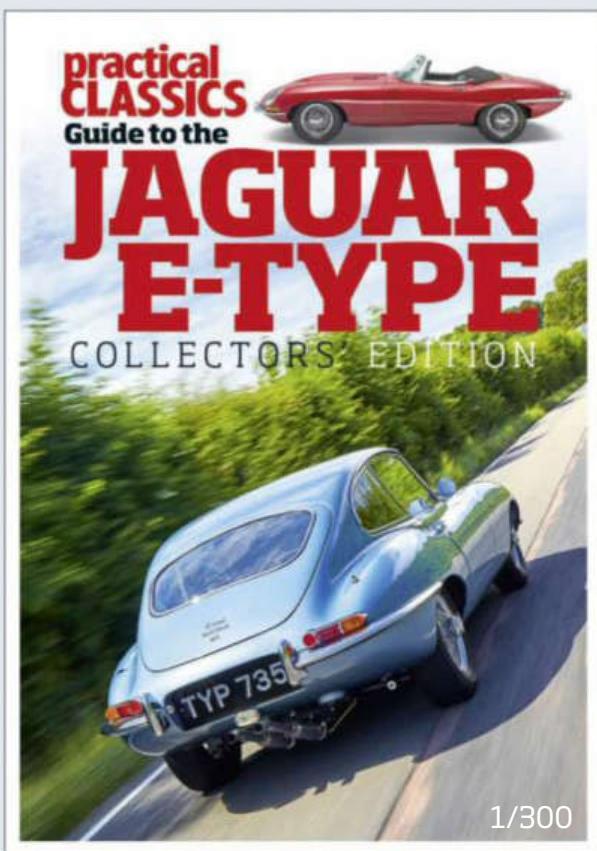
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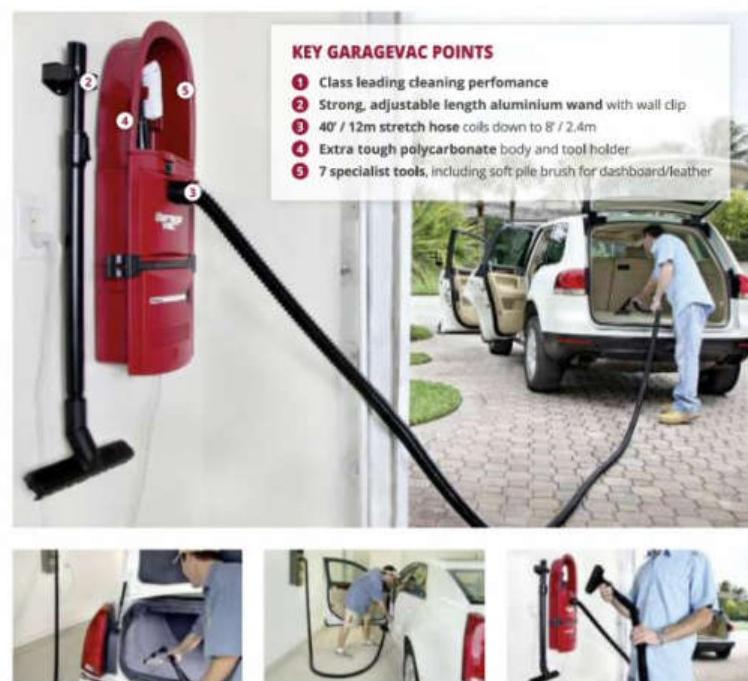
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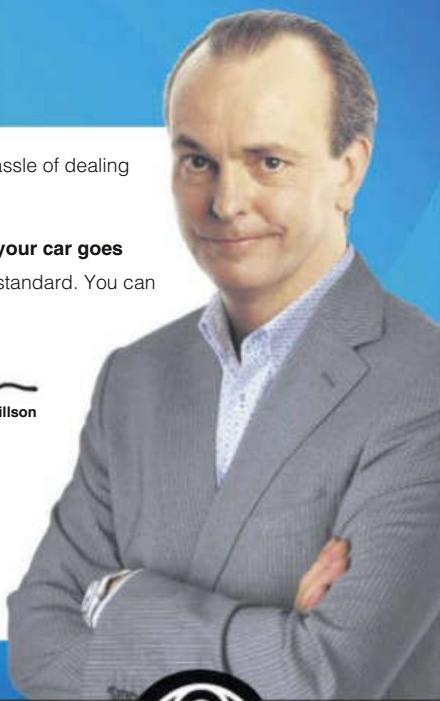
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this retro-rehashing, BMW had the fore (or rear-) sight to graft on some of the slimmest, coolest taillights ever seen in the pre-Millennium era.

2 MERCURY COUGAR

An upmarket Mustang spin-off using most of the same hardware, Mercury's pony car got a stretched wheelbase and more posh, with hidden front lights and some very cool sequential rears copied from the earlier Thunderbird, that pulsed in the direction you were indicating. So cool, Carol Shelby nabbed them for his modded '67 Mustangs.



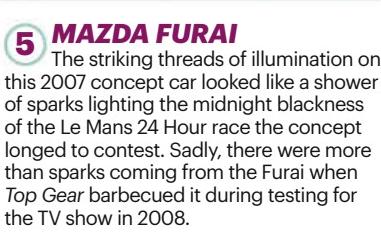
4 '59 CADILLAC

Fifty-nine was the peak, quite literally, of Detroit's obsessions with fins, but the showy sheetmetal appendages wouldn't have looked half as loud without that year's twin-rocket-flame shaped lamps at each side. For 1960 the lights were neatly integrated into a pair of distinctly atrophied fins.



5 MAZDA FURAI

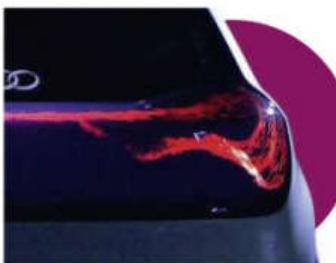
The striking threads of illumination on this 2007 concept car looked like a shower of sparks lighting the midnight blackness of the Le Mans 24 Hour race the concept longed to contest. Sadly, there were more than sparks coming from the Furai when *Top Gear* barbecued it during testing for the TV show in 2008.



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6 AUDI SWARM OLED

Back in 2013 Audi gave us the first taste of the OLED technology it productionised in time for last month's Frankfurt show. The bizarre Swarm lights look like they'd escape up the road if your lamp ever got smashed in a fender bender. Worth Googling for a video if you missed them first time round.

7 Mk1 CORTINA

You want mash with that? Ford's iconic pie lights, or Pye, if you remember the period hi-fi brand, are as recognisable as the Lotus version's green stripes, and turned up on TVR's Grantura in an early bit of kit-car scavenging. BMW's 02 series riffed on the same theme.



8 DODGE CHARGER

Chargers almost always had cool lamps, but it's not the four circles of the much-admired Bullitt-era '68 that the 200mph modern version references. Instead it's the full-width light bar of the very first, back in 1966, combined with a bit of Dukes'-spec '69 for good measure.



9 LAMBORGHINI ASTERION

Lambo lamps were lamentable until Sant'Agata turned the wick up on the Murcielago to create the trick Reventon. Now they've settled on an instantly recognisable motif, you'll still be able to tell a Lamborghini from lesser supercars even when electrification finally silences the V12 – though that's not happening just yet.

10 McLAREN P1

You can't truly appreciate how sensational the P1 looks until you've seen one at night, impossibly slender taillamps wrapping around the rear facia like a neon motel sign on Route 66. But this is a McLaren, so there's science involved too: conventional lights would have stopped the colossal amount of heat the V8 generates escaping.



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